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ORIGINAL ARTICLES.

AINHUM.[1]

BY WALTER L. PYLE, A.M., M.D.,
OF WASHINGTON, D. C.

AINHUM may be defined as a pathologic process, the ultimate result of which is a spontaneous amputation of the little toe. It is confined almost exclusively to negroes, chiefly males, and of African descent. In Brazil it is called "ainham" or "quigila." "Ainham" literally means to saw, and is doubtless a colloquial name derived from a supposed slow, sawing process. The Hindu name for it is "sukha pakla," meaning dry suppuration.

In 1866, da Silva Lima, of Bahia, at the Misericordia Hospital, gave the first reports of this curious disease, and for quite a period it was supposed to be confined to Brazilian territory. Since then, however, it has been reported from nearly every quarter of the globe. Relative to its geographic distribution I will make a brief summary of reports from different localities:

South America. Da Silva Lima and Seixas, of Bahia, have reported numerous cases in Brazil, as have Figueredo, Pereira, Pirovano, Alpin, and Guimares. Toppin reports it in Pernambuco.

Egypt. Mr. Milton reports a case from Cairo, and Dr. Creswell at Suez, both in slaves.

Trinidad. E. A. G. Doyle reports several cases at the Fernando Hospital.

African Coast. Digby reports its prevalence on the west coast of Africa, particularly among a race of negroes called Krumens. Messum reports it in the South African Republic, and speaks of its prevalence among the Kaffirs. Eyles reports it on the Gold Goast. It has also been seen in Algiers and Madagascar.

India. Through the able efforts of Her Majesty's surgeons in India the presence of ainhum has been shown in India, and considerable investigation made as to its etiology, pathologic histology, etc. Wise at Dacca, Smyth and Crombie at Calcutta, Henderson at Bombay, and Warden, Sen, Crawford, and Cooper in other portions of Southern India have all rendered assistance in the investigation of ainhum.

In *China* a case has been seen, and British surgeons speak of it as occurring in *Ceylon.*

British Guiana. Von Winckler presents an admirable report of twenty cases at Georgetown.

St. Thomas. Dr. Potoppidan sends a report of a case in a negress.

The disease has several times been observed in *Polynesia.*

North America. Dr. Hornaday reports a case in a negress from North Carolina, and, curious to relate, O. Horwitz, of Philadelphia, and Shepherd, of Canada, found cases in negroes both of North Carolina antecedents. Dr. James Evans reports a case in a negro, seventy-four years of age, at Darlington, S. C. Dr. R. H. Days, of Baton Rouge, La., had a case in a negress, and Dr. J. L. Deslates, also of Louisiana, reports four cases in St. James Parish. I have seen a case in a negress, aged fifty years, in Washington at the Emergency Hospital.

The foregoing summary shows the universal distribution of the disease, the Arab, Hindu, Mussulman, and even the Mongolian being susceptible as well as the negro.

So prevalent is the disease in India that Crawford found a case in every 2500 surgical cases at the Indian hospitals. The absence of pain or inconvenience in many instances doubtless keeps the number of cases reported few, and again we must take into consideration the fact that the class of persons afflicted with ainhum are seldom brought in contact with medical men.

Ainhum is a much more common disease than has heretofore been supposed, and as such deserves a careful consideration.

The disease usually affects the fifth phalanx at the inter-phalangeal joint. Cases of the fourth and other phalanges have been reported. Cooper speaks of a young Brahmin who lost his left great toe by this process. Crombie speaks of a simultaneous amputation of both fourth toes. Potoppidan reports a similar case in a negress on St. Thomas Island. Sen reports a case in a supernumerary digit in a child, whose father, a Hindu, lost a toe by ainhum. Eyles reports a case in a negro in whom the second finger was affected. Mirault, at Angiers, speaks of a case in which two fingers were lost in fifteen days, a fact which makes his diagnosis dubious. Beranger-Ferrand has seen all the toes amputated, and there is a wax model by Baretta, Paris, in the Army Medical Museum at Washington, in which all the toes of the right foot have been amputated, and the process is fast making progress at the middle third of the leg.

[1] Read before the Pathological Society of Philadelphia, November 8, 1894.

Ainhum is much more common in males than in females; it is in fact distinctly rare in the latter. Of Von Winckler's twenty cases all were males. It may occur at any age, but is most common between thirty and thirty-five. It has been reported *in utero* by Guyot, and was seen to extend up to the thigh, a statement that is most likely fallacious. However there are well-authenticated cases in infants, and again in persons over seventy years of age.

In some few cases the metatarso-phalangeal joint is affected; but no case has been seen at the base of the ungual phalanx.

The duration of the disease is between two and four years, but Dr. Evans' case had been in progress fifty years. It rarely runs its full course before a year.

Reports conflict as regards the influence of climate on this disease. Wise, at Decca, says it is most common in damp or rainy weather, while Crombie and Smyth, also in India, report cases from the dry highlands associated with goiter. Climate, perhaps, has no influence on it. Dry, hard ground causes more pain in walking, and the dry cold winds, spoken of by Crombie, exert their influence indirectly in this manner.

There is a difference of opinion again regarding the soil favorable for its development. Sandy soil is reported to be a cause, and the Egyptian reports attribute it to working in salt. Seixas, of Bahia, an authority, says the wearing of boots does not prevent it. Weight-carriers are most affected, particularly on a hard soil, according to some Indian observers. We can, therefore, form no definite conclusion as to the influence of soil outside of the extra pain caused by walking on a hard soil.

Symptoms. Ainhum begins as a small furrow or crack, such as soldiers often experience, at the digito-plantar fold, seen first on the inner side. This process of furrowing never advances in soldiers, and has been given a name more expressive than elegant. In ainhum the toe will in a few days swell, and a pain, burning or shooting in nature, may be experienced in the foot and leg affected. Pain, however, is not constant. There may be an erythematous eruption accompanying the swelling. The furrow increases laterally and in depth, and meets on the dorsal aspect of the toe, giving the toe the appearance of being constricted by a piece of fine cord. As the furrow deepens the distal end of the toe becomes ovoid, and soon an appearance as of a marble attached to the toe by a fibrous pedicle presents itself. By this time the swelling, if any, has subsided. The distal end of the toe bends under the foot, and becomes twisted when walking, and causes inconvenience, and, unfortunately, says Eyles, it is in this last stage only that the Fanti presents himself. There is in the majority of cases a small ulcer in or near the digito-plantar fold, which causes most of the pain, particularly when walked on. This ulcer does not occur early, and is not constant. The case under my observation showed no ulceration, and was absolutely painless, the negress applying for diagnosis rather than treatment. The furrow deepens until spontaneous amputation takes place, which rarely occurs, the patient generally hastening the process by his own operation, or by seeking surgical treatment. A dry scab forms at the furrow, and when picked and repicked constantly re-forms, being composed of horny desquamation or necrosis.

The *histology* of ainhum shows it to be a direct ingrowth of epithelium, with a corresponding depression of surface due to a rapid hyperplasia that pushes down and strangles the papillæ, thus cutting off the blood-supply from the epithelial cells, causing them to undergo a horny change. We are indebted to C. H. Eyles for the best description of the histologic change as observed microscopically.

The disease is not usually symmetrical, as formerly stated, nor is it simultaneous in different toes. There are no associated constitutional symptoms, no tendency to similar morbid changes in other parts, and no infiltration elsewhere. There is little or no edema with ainhum.

Crombie made measurements of the circumference of both the left and right toes in a case of ainhum, as follows: Circumference at bottom of furrow, right, 1⅞ inches; left, 1¼ inches. Circumference of distal phalanx, right, 2⅜ inches; left, 2⅞ inches. This demonstrates the lack of symmetry of the morbid process.

As a rule, sensation is not destroyed, although cases of anesthesia have been reported. There is usually no change in the nail. Weber compares the appearance of the distal end to a diminutive potato. The dorsal tendon stands out as a white cord, surrounded by a black ring. Eyles made his studies in a section hardened in Müller's fluid, and stained *en masse* in picro-carmin or eosin. The changes resemble somewhat the morbid process seen in lupus. The hypertrophy of the epidermis at the tip approximates one mm. in thickness, while that near the constriction equals 5 mm. in thickness. In the stratum corneum there is seen an hypertrophy of the interpapillary process, which is irregular. In the stratum lucidum the hypertrophy is uniform, and this layer in the posterior portion of the section becomes fused into the layer above. Instead of the characteristic appearance of an indistinct layer of two or three cells deep, we see a layer of distinct cells twelve or fifteen deep.

Hypertrophic change is seen in the stratum granulosum also. In the stratum malpighii, anteriorly, while the interpapillary processes increase in all

dimensions, slender processes, composed of double columns of closely-apposed pigmented (germinal) epithelium are seen which pass down, splitting the papilla. As the stage of separation advances these processes, which are formed by the evolution of the germinal layer covering the top of the papilla, give off shoots that coalesce with shoots of adjacent processes, and a network is formed, the trabeculæ of which consist of double layers of pigment-cells. Eyles describes the appearance on transverse section as a sheet of more or less typical prickle-cells, which is perforated by round or oval islets of papillary material, each islet being surrounded by a single layer of pigmented epithelium. Posteriorly, the entire thickness resembles the stratum corneum; the only foreign representative is a layer of pigment-cells, which may take the form of dim processes or form a small network. As to dermal or sub-dermal changes, there is seen a hyperplasia of fibrous tissue, subsequent to chronic inflammation. As concerns vascular changes, the larger arteries show an increase in adventitia, but little change in the muscular coat, though proliferation of connective-tissue elements may increase it. The intima is subject to a process similar to an endarteritis obliterans, which decreases or obliterates the lumen. As the vessels become smaller or capillary they are surrounded, if anteriorly, by a small round-cell infiltration, or, if posteriorly, by fibrous tissue. The section of the specimen can thus be distinguished. The capillary loops undergo a hyaline change, and there is fusion of the endothelial plates. In the veins the adventitia and endothelium are swollen. As to glandular changes, Eyles' observation showed a thickening occasionally of the membrana propria by the addition of white fibrous tissue. There may be fatty change in the distal end of the coil, and the lumen becomes less.

The osseous changes consist in a rarefying osteitis, which advances regularly from the periosteum, but irregularly toward the center. There is little attempt at new bone-formation, and cavities are formed which eventually become filled with a reticulum of delicate fibrous tissue, capillaries, and oil-globules. There is a gradual conversion into fibrous tissue.

Eyles made little or no observation of nerve-changes; but there is doubtless a process identical with that seen in neuritis of any duration.

The similarity to epithelioma is seen by the foregoing description; but there is no infiltration or epithelial hyperplasia at the side or in the vicinity of the furrow, this being confined to the deepest portion.

In ainhum there is, first, simple hypertrophy, then active hyperplasia. The papillæ are pushed down and deprived of blood-supply, and undergo horny change. Meanwhile the pressure thus exerted on the nervivasorum sets up vascular changes which bring about epithelial changes in more distant areas, the process advancing anteriorly, that is, in the direction of the arteries. This makes the cause, according to Eyles, an inflammatory and trophic phenomenon due mainly to changes following pressure on the vasomotor nerves.

Etiology. The theories of the causation of ainhum are quite numerous, and I will take them up individually.

The influence of soil and climate has already been discussed

The first cause is the admirable location for a furrow in the digito-plantar fold, and the excellent situation of the furrow for the entrance of sand or other particles to make the irritation constant, thus causing chronic inflammatory changes, which are followed subsequently by the changes peculiar to ainhum.

The cause has been ascribed to the practice of wearing rings on the toes; but von Winckler says that in his locality (British Guinea) this practice is confined to the coolie women, and in not one of his twenty cases had a ring been previously worn on the toe; in fact, all of the patients were males. Digby says, however, that the Krumens, among whom the disease is common, have long worn brass or copper rings on the fifth toe. Again, the natives of India, who are among those most frequently afflicted, have no such custom.

Injury, such as stone-bruise, has been attributed as the initial cause, and well-authenticated cases have been reported in which traumatism is distinctly remembered; but Smyth, Weber, and several other observers deny that habits, accidents, or work, are a feature in causation. The case I saw gave no history of traumatism.

The American observers of most recent date advance the theory of pathogenic organisms; but the immunity of people not dark-skinned seems to contradict this, together with the fact that there is no history of contagion in ainhum. Collas say the disease is amputating leprosy, but the fact of its being localized and the absence of constitutional symptoms contradict this theory. The affection has been called pityriasis Ethiopium and scleroderma annulare. Frontau denies its existence as a distinct disease.

To summarize, none of the theories advanced bears discussion but that of Eyles, and, from my own observation of the process, there is pressure of the hypertrophied fibrous tissue subsequent to continued irritation on the vaso-motor nerves, to which pressure the peculiar morbid changes of ainhum are due. It is really a tropho-neurosis. Heredity seems to exert little influence.

The diagnosis is easy. No other disease resembles it. Gangrene is distinctly different. In frost-bite there is a history of cold, and this affection is of short duration.

The absence of constitutional symptoms and its limited field of occurrence distinguish ainhum from leprosy and from elephantiasis.

I have compiled a list of all the existing literature of the subject in the Surgeon-General's Library at Washington, and herewith append it.

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1701 H. STREET, N. W.

TROPHIC LESIONS OF THE JAWS IN TABES DORSALIS.

BY LEO NEWMARK, M.D.,
OF SAN FRANCISCO, CAL.;
PHYSICIAN TO THE SAN FRANCISCO POLYCLINIC.

TROPHIC changes in the jaws have been much less frequently observed in tabes dorsalis than the disturbances in the nutrition of the joints and the bones of the extremities which so interestingly vary the course of that most common disease of the spinal marrow. Although the first observations of a tabetic maxillary affection were published as long ago as 1868, a German author[1] in 1891 was not able to collect more than twenty-two cases. All of these were gathered from the French and German literature. Brief mention of the loss of teeth may occasionally be met in some English or American work, but no description of the typical tabetic disease of the jaw is presented. It is therefore hoped that the following account of a case which was observed at the San Francisco Polyclinic will not be deemed superfluous.

The patient, a man forty-three years of age, came under observation February 6, 1894, complaining of shooting pains in the lower extremities. Twenty years ago he had three or four soft venereal sores followed by suppurating buboes. No syphilitic symptoms supervened. During eighteen years of married life his wife had been well and had borne him three children, two of whom still live and are healthy, while the other died at fourteen years of some acute disease. About eight or nine years ago there were two miscarriages.

The patient was in good health until about seven years ago, when he was seized with his present disease—rather acutely, according to his account. While lifting a heavy piece of lumber he felt something give way in his back, and was unable to stand upright for several days thereafter. Then he staggered in walking, his legs yielded, and his thighs felt numb. A week after the injury there was complete retention of urine, and the catheter had to be passed during five or six weeks. The bladder gradually recovered to a great extent, but some weakness of the urinary current has persisted. For several years past he has experienced no normal

[1] Rosin: Deutsche Zeitschrift für Nervenheilkunde, 1891, Bd. i, p. 532. This writer collated the cases reported up to that date and appended a bibliography to his article; but his list is not quite complete. Since then Hudelo has recorded a case in Annales de Dermatologie et de Syphiligraphie, May, 1893, and Wickham has republished this case and added another in the same journal for January, 1894. A review of several French cases, most of which are referred to by Rosin, will be found in a paper entitled "Les Altérations Dentaires au Cours du Tabès," by Lemarié and Albert Bernard in L'Odontologie, February, 1894; a translation of this paper is contained in the Pacific Coast Dentist for May, 1894. In his contribution to the jubilee-volume of the University of Halle ("Ueber traumatische Tabes," etc., 1894; page 27 of the reprint), Hitzig gives a brief account of a tabetic patient observed in 1870 who had been affected in 1863 with the jaw-disease now under consideration. A case is mentioned by Gowers in his Manual of Diseases of the Nervous System, second American edition, vol. i, p. 411.

desire to micturate, and passes his water at regular intervals, not in response to any stimulus, but as a matter of habit and prudence. When worried he is compelled to have recourse to the catheter. The bowels gave no cause for complaint.

For over two years after the time from which he dates his disease he had pain in the small of the back, and needed the support of a cane in walking. When the pain ceased and his gait improved the lightning-pains began in the legs and in the sides of the trunk, sometimes darting up into the left arm-pit, and they have continued to torment him frequently. There is no girdle-sensation. Sexual power is abolished. There have been neither laryngeal nor gastric crises. Vision is not disturbed. Some care is required to "regulate his walk," especially when descending stairs.

Incidentally the patient remarked that, although he had never suffered from toothache, he had in the course of the last three or four months lost thirteen of his upper teeth. He had previously had slight neuralgia in the right cheek and temple. The falling out of the teeth was quite painless and attended with very little or no bleeding. Thus, while eating, he would become aware that a tooth was loose, would easily extract it with his fingers, and then proceed with his meal, or the tooth would not even require "picking" (as the patient termed it), but fell spontaneously into his mouth.

He furthermore related that two pieces of bone had recently been painlessly cast off from the left side of the upper jaw.

In the course of his illness this man had taken a considerable quantity of drugs, among them potassium iodid, especially during the last two years, but he has not had stomatitis nor been salivated.

On the 6th of February the patient was described as a gray-haired individual of medium height. A large cicatrix in the right groin was the only reminder of the venereal infection. His gait was not conspicuously ataxic, but the usual tests disclosed a moderate degree of incoördination in the lower limbs. Romberg's symptom was quite marked. There was the Argyll-Robertson pupil, and the left pupil was larger than the right. The knee-jerks were absent, as were also the plantar reflexes. The cremasteric reflex was faint on either side; the abdominal reflex was present and brisker on the right than on the left side, being rather excessive on the former; the right abdominal reflex could be provoked by stroking the upper part of the anterior and inner surfaces of the right thigh, as in the manipulation employed to produce the cremasteric reflex. There was slight anesthesia at the outer and inner borders of the feet and on the outer surface of both thighs; the anesthesia was more marked in the right gluteal region. Sensation was said to be less acute in the left half of the abdominal surface than the right, but this difference was purely subjective.

There was no anesthesia or ataxia in the upper extremities. The triceps reflex was not obtained; the periosteal reflexes of the forearm were present. Sensibility in the face was normal. The special senses were unimpaired. Thirteen teeth of the upper jaw were missing; only the two central incisors and the right wisdom-tooth remained. The lower set was complete.

In that part of the left superior maxilla from which the two fragments of bone mentioned by the patient were eliminated the gum[1] was swollen and lacerated, exposing the bone and secreting pus. This region, as well as the rest of the upper gums, was insensitive to pain; prodding the mucous membrane with hot needles or tapping on the exposed bone produced no discomfort. There was much tartar on the lower teeth, and the gums were irritated; the two central incisors were somewhat loose and tender. This was the first time the patient had ever experienced anything like pain in a tooth. Apart from this, there seemed to be some analgesia of the lower gums also. Sensation in the tongue and mucous membrane of the cheek was preserved, also in the nasal mucosa.

On the 26th of February the patient reported that a few days before he had felt something loose in the left side of the upper jaw, and with his tongue had dislodged a third piece of bone, which he brought for inspection. The exfoliation of this sequestrum was perfectly painless. The sequestrum contained an alveolus. After this event the erosion of the gum promptly began to heal, and in a short time only a depression in the alveolar process marked the site of the necrosis. One of the lower incisors, which was loose and tender, was extracted at about this time by a dentist, as it projected beyond the line of the teeth, and was deemed superfluous. Its extraction was stated to have been quite painful. It is well to emphasize the fact that this trouble in the lower jaw was solely due to the accumulation of tartar. There has been no disturbance since.

Until nearly the middle of May there was no further alteration in the patient's dental condition. Then another breach was made in his ἔρκος ὀδόντων, for the two remaining upper incisors became loose, and he "picked" one of them himself without pain or bleeding, while a dentist removed the other with almost equal ease. Soon the same process was established at the site of these teeth as had previously taken place on the left side of the upper jaw, and on the 7th of June a fragment of bone was exfoliated. After this the lesion of the gum quickly healed.

On the 11th of June the patient complained of pain on the inner side of the right cheek, opposite the molars. Inspection revealed the presence of an ulcer of the gum, extending forward from the last molar about an inch, and invading laterally the mucosa of the cheek, but displaying no tendency to spread toward the hard palate. The ulcer was quite pale and torpid; excepting where it encroached on the cheek it was analgesic; it exposed the bone, which was evidently necrotic, and secreted considerable pus.

At this stage of his disease the man was shown to several dentists who had convened in San Francisco to attend the Mid-Winter Fair Dental Congress. A

[1] It had been subjected to dental treatment before the patient came to me.

number of the teeth which had been shed were carefully examined and pronounced sound. It was established that their falling out was not due to pericementitis, pyorrhœa alveolaris, or any other process with which dentists ordinarily have to deal. Dr. William J. Younger, a dentist of more than national reputation, testified that this maxillary disease was all but unique in his very extensive experience.

No palpable fragments of bone were cast off from this ulcer, but the alveolar process was nevertheless undergoing disintegration, for soon a probe entered the antrum through the ulcer without encountering resistance. Many weeks elapsed before a tendency to heal became manifest. Finally, however, the gums closed again over the bone, leaving a long delicate cicatrix over the depression in the alveolar process and a small opening leading into the antrum.

On the 25th of June the right wisdom-tooth dropped out, and the denudation of the upper jaw was now complete. A sharp-pointed instrument inserted into the socket of the tooth provoked no pain. It was now about nine months since the "devastation had begun," but not yet was the "business of destruction done."

In the beginning of July, long before the ulceration of the gums on the right side had healed, a small ulcer appeared in the gum on the left side of the upper jaw at about the site of the last molar. This erosion gradually extended forward until it reached the locality of the left lateral incisor. It was pale, atonic, and analgesic. Like its companion on the other side of the jaw, it occupied the external half of the alveolar ridge, tending to invade the cheek, but avoiding the roof of the mouth. The bone was exposed, and there was a discharge of thin pus. No fragments of bone were eliminated, but there was evident osseous decay, for soon the antrum was opened. It was not until the middle of October that this ulceration had healed, leaving a still larger depression in the alveolar process than had been produced by the necrosis in February, and the fistula of the antrum.

At present (in the last week in October) no destructive process is visible in the jaw, but a recurrence must be apprehended.

Although not pertinent to the subject under immediate consideration, the patient's clinical history may be supplemented by adverting to an event of the 28th of June. On the morning of that day, as he was about to board a street-car, his left leg suddenly gave way at the knee; it felt "as if weighted with a ton," and seemed devoid of sensibility. When seen in the afternoon, the patient's gait was very unsteady, and he was forced to support himself on a cane; the ataxia was now quite marked, but it was much more conspicuous in the left leg than in the right. Tactile sensation was not so profoundly altered as the patient's account might have led one to suppose, but it was somewhat blunted in the left lower leg and foot as compared with the right; there was a distinct reduction of electro-cutaneous sensibility in the former; the retardation in the conduction of painful and thermic impressions amounted to five seconds in the left foot and three seconds in the right; and the muscular sense was now greatly disturbed in both lower limbs, but especially in the left one. There was also some loss of power in the left foot, but the muscles reacted well to the faradic current. Romberg's symptom was more marked than before.

With this acute onset, or at least sudden increase, of incoördination, there came a cessation of the lightning-pains. The appetite, sleep, and digestion improved, and the patient was enabled to resume his work (as a distributer of quack-advertisements!).

Unfortunately, during the cool weather prevailing in the middle of August the pains recurred with all their former severity. Then the disturbance in the leg began to abate, and examination a month later disclosed decided improvement in regard to the steadiness of the gait and some diminution of the other symptoms. The patient now walks without any support; but the lightning-pains continue to torment him.

The subjective and objective symptoms as herein set forth are sufficient to establish the diagnosis of tabes dorsalis.

With respect to the changes in the jaw and the loss of teeth, this case conforms on the whole to the manner in which these disturbances took place in the majority of cases reported in neurologic literature. A survey of all the accessible records, however, shows certain variations in the extent and the rapidity of the destructive process, as well as differences with regard to the period of tabes in which the maxillary disorder may supervene.

The immunity of the lower jaw in the present instance is worthy of note. In no case does the disease appear to have involved the lower jaw before the upper had been affected. Either both jaws are seized simultaneously, or (as in the larger proportion of cases) the upper becomes diseased first. Years may elapse between the onset of the trouble in the upper jaw and the implication of the lower.

As has been said, the shedding of the teeth and the destruction of the bone progress with variable rapidity. A few teeth having dropped out, and a necrotic fragment of bone having been exfoliated, a pause may succeed, lasting in some instances for years, before more teeth and more of the substance of the jaw undergo the same fate; or the denudation of the jaw may be completed in a very short time; thus, in one instance,[1] two weeks sufficed to deprive the upper jaw of all its teeth; and Gowers[2] tells of a patient who found that all his upper teeth fell out in the course of three days, without any pain or decay.

The maxillary disease may appear at any stage of tabes dorsalis. In some instances over twenty years had elapsed since the onset of the latter; in

[1] Hoffmann: Berliner klinische Wochenschrift, 1885.

[2] Manual, I, p. 411.

others fifteen, ten, seven, and four years respectively, and one individual is related by Hoffmann to have lost all his upper teeth in the characteristic way over one year and a half prior to the first typical manifestations of tabes.

The dropping out of the teeth is sometimes unattended with necrosis of the jawbone. In two such cases the patients were affected also with the loss of their nails, and in another there was a perforating tabetic ulcer of the foot.[1]

In Wickham's paper on "Ulcérations buccales tabétiques" (*Annales de Dermatologie et de Syphiligraphie*) a patient is described who was afflicted with three perforating plantar ulcers, two on one foot and one on the other. This individual had lost in a comparatively short time, without pain, all his upper teeth and a number of his lower teeth, and the alveolar process was atrophied. There was on the alveolar border of the upper jaw a large, indolent ulcer apparently like those seen in my patient, but evincing a tendency to extend toward the roof of the mouth; it was anesthetic and penetrated to the bone, and Fournier, considering it to be of the same nature as the perforating ulcers of the foot, proposed to call it "*mal perforant buccal.*" In another case observed by Wickham and previously reported by Hudelo, this same maxillary affection was not associated with trophic lesions in any other part.

As far as can be judged from the description, there seems to be no essential difference between these "ulcérations buccales tabétiques" and those which in my patient exposed the bone. It has been seen that the latter are not necessarily associated with the elimination of appreciable fragments of bone, although the bone at the base is decayed, and that they ultimately heal in one part, while others form in other localities. We may agree with the statement of Wickham that the characteristics of these lesions are well marked; indeed, they are so pronounced that Fournier was enabled in the second case which he encountered to diagnosticate tabes simply by inspection of the mouth.

I have not been able to ascertain any instance in which this affection of the jaws accompanied any other nervous disease than tabes dorsalis.[2] Nor does it seem to occur as an independent disorder, and its distinction from the effects of phosphorus, actinomycosis, and other agents deleterious to the jaws and teeth meets with no difficulty. Syphilis, which is credited with so preponderant an influence in the production of tabes, cannot be held directly responsible for this jaw-disease associated with tabes, and we have Fournier's authority for the statement that Hudelo's case was not syphilitic.

Atrophy of the jawbones, especially the upper, and loss of teeth, may occur also in facial hemiatrophy, but the course and the attending circumstances are different in the two disorders. Their pathology, however, may be fundamentally identical, both being the supposed result of impaired trophic influence of the fifth nerve. It is interesting in this connection to note the coincidence of facial hemiatrophy and tabes dorsalis in a case reported by Jolly.[1]

The fifth nerve has been found affected in its trunk, ganglion, roots, and nuclei in various cases of tabes which had presented symptoms in the area of its distribution during life. But the only necropsies of cases in which the tabetic jaw-disease was among these symptoms are those recorded by Demange,[2] who made an anatomic examination of an individual who, about the fifteenth year of his tabes, had lost in less than two months all the teeth of his upper jaw, one after the other, in the characteristic manner; there was marked inflammation of the trigeminal nerves and atrophy of their bulbar nuclei. In another case observed by the same writer all the upper teeth on the left side had dropped out in the course of a month, while those on the right side were almost intact.[3] The autopsy disclosed atrophy of both fifth nerves, that of the left greatly exceeding that of the other, and there was also complete atrophy of the left Gasserian ganglion.

The anesthesia resulting from the disease of the nerve is by no means sufficient to account for the disturbance in the nutrition of the jaw; this has been proved by clinical observation and experimental research. We are constrained to assume an alteration of the trophic influence exercised by the nervous apparatus on the tissues. The trophic action of nerves has been as vehemently denied as it has been asserted in the discussions on the pathology of certain other lesions observed in the course of tabes;[4] it is the failure to corroborate the theory of such action by experimental methods that has prevented its general acceptance as an explanation

[1] Weizsäcker observed a patient with loss of teeth, necrosis of the upper alveolar process, and tabetic disease of the knee-joints. Referred to by Rosin.

[2] Westphal demonstrated in 1885 to the Berlin Neurological Society a man "who had been suffering for several years from severe neuralgia in the area of the right trigeminal, especially its maxillary branches, and now presented a peculiar disturbance in the nutrition of the gums and the teeth of the right upper and lower jaws." Archiv für Psychiatrie, Bd. xvii. I have not met with any other reference to this case, explaining the nature of the "peculiar disturbance."

[1] Berliner klinische Wochenschrift, 1891, p. 924. No mention is made in this case of a maxillary or dental trouble.

[2] Revue de Médecine, March, 1892. Quoted in L'Odontologie, February, 1894, p. 67.

[3] Charcot exhibited a tabetic woman with anesthesia of the left side of the face, loss of taste in the left half of the tongue, and falling out of teeth on the left side. Leçons du Mardi, 1887 to 1888, p. 85.

[4] See the debates at the Clinical Society of London, November and December, 1885.

of occurrences like this disease of the jaw. The recent labors of Gaule[1] have, however, shown how subtle are the conditions that determine the success or failure of experimental investigations on the trophic properties of the nervous system; it is to be hoped that the further prosecution of these researches may result in elucidating by experiment the effects wrought in cases like this by disease.

INVESTIGATIONS CONCERNING THE ETIOLOGY OF SMALLPOX.

BY J. CHRISTIAN BAY, M.D.,
OF DES MOINES, IOWA,
BACTERIOLOGIST IOWA STATE BOARD OF HEALTH.

THE question of the etiology of smallpox is one of the most interesting topics in bacteriology, and has been the subject of a considerable number of investigations during the last thirty years. A brief historic sketch illustrating what has hitherto been done in this line should, naturally, precede the record of my own investigations. The complete history of the question will be embodied in my final report to the Iowa State Board of Health, under whose authority my work[2] was carried on during the course of this year.

Numerous writers have investigated the lymph both of smallpox and vaccinia, and some have found specific micro-organisms, both animal and vegetable, which they have regarded as the primary cause of the disease or of the specific eruptions.

One of the micro-organisms heretofore more or less generally recognized as the effective agent is the *micrococcus vaccinæ* and *variolæ*;[3] Bareggi has stated that the micro-organisms of smallpox and those of vaccinia are identical.[4]

In 1868 Chauveau[5] proved that vaccine-virus is deprived of its active constituents by filtration. Hence, it became very probable that the contagion was a living organism. "For when he carefully poured a stratum of water upon a layer of lymph in tiny tubes he obtained a diffusion of the dissolved material into the water; but this clear solution could not produce pustules like the insoluble residue."

In the same year Hallier[6] described micrococci obtained from human smallpox and cow-pox eruptions.

Luginbuehl[1] discovered, in sections cleared with acetic acid, micrococci that formed colonies at certain places in the skin, near the epidermis, in smallpox eruptions.

Beale[2] found in smallpox-lymph "vast multitudes of minute particles of living matter or bioplasm," but he did not consider these the *causa morbi*.

Cohn[3] showed the presence of numerous cocci in vaccinia- and smallpox-lymph, and named them *microsphæria*, or (later) *micrococcus vaccinæ*. The organisms were quite distinct, and Cohn demonstrated their specific nature, and contended that they did not represent a stage in the development of some other organism.[4]

Weigert[5] found micrococci in the pustules of smallpox when the disease was not too far advanced and also in the blood-vessels of certain internal organs in which eruptions may be observed.

Klein[6] observed that in sheep-pox the lymphatics are filled with micrococci.

Klebs[7] has made statements that the organisms (micrococci) in vaccinia-lymph and variola-lymph exhibit peculiar physiologic and morphologic peculiarities (being about 0.5 μ in diameter), and that they must belong to the cocci which, onthogenetically, assume no other shape. In accordance with their peculiar arrangement (being grouped in fours), they were named *micrococcus quadrigesimus*.

In 1885 Voigt[8] examined the vesicles of vaccinia, and found three species of micrococci, two cocci, and a diplococcus, and in the same year L. Pfeiffer[9] published his first communication upon smallpox. The latter found in the characteristic eruptions a sprouting fungus (*Saccharomyces*) and certain saprophytic bacteria, but none of these occurred constantly. I might add in this place that the sprouting fungus that was described as a *Saccharomyces* does not belong to this genus,[10] but to the group *Torula*, in the sense of Pasteur and Hansen.[11] In vaccinia-lymph I have occasionally

[1] Berliner klinische Wochenschrift, 1893.

[2] Preliminary reports which contain some views not in accord with later results of the work were printed in the Iowa Health Bulletin, 1894, vii, 184; viii, 21.

[3] Cf. Crookshank, Manual, 1886, p. 203; Klein, Microörganisms and Disease, 1886, pp. 79, 80.

[4] Sul microbi specifici del vajuolo, del vaccino e della varicella. Gaz. med. Ital. Lomb. Milano (8) 1886, vi, 480, 506, 519, 529, 545.

[5] Comptes Rendus, 1868, lxvi, 289, 317.

[6] Aerztliches Intelligenzblatt, 1868, xv, 95.

[1] Verhandl. d. phys. med. Ges. in Wuerzburg, 1873, iv, 99, 114.

[2] Disease-germs: their Nature and Origin. London, 1872, p. 148,; pl. xviii, fig. 64.

[3] Arch. f. pathol. Anatomie, 1872, lv, 229, 238.

[4] Compare also Loeffler, Vorlesungen ueber die geschichtl. Entwick d. Lehre von den Bakterien, 1887, i, 132.

[5] Ueber Bakterien in der Pockenhaut. Centralbl. f. d. med. Wissenschaften, ix, 606–611, 1871. Ueber pockenaehnl. Eruptionen in innern Organen. Deutsche Zeitschr. f. prakt. Med. 1874, i, 367–369.

[6] Phil. Trans. Roy. Soc., Lond., 1874; cf. Microörganisms and Disease, 1886, p. 69.

[7] Arch. f. experiment. Pathol. und Pharm., 1879, x, 222.

[8] Deutsche med. Wochenschrift, 1885, xi, 895–97.

[9] Ueber Sprosspilze in der Kälberlymphe. Correspondenz. Blatt d. allgem. aerztl. Ver. von Thüringen, xiv, 96–97, 1885.

[10] See my paper in the American Naturalist, 1893, xxvii, 685–696.

[11] Cf. Joergensen, Microörganisms and Fermentation, 1893, p. 190, and Bay, Amer. Monthly Micr. Journal, 1894, xv, 42.

found a *Torula* that corresponds to Hansen's fifth species. The cells observed by Pfeiffer did not bear spores; they have no causal relation to smallpox. This *Torula*, certain saprophytic bacteria, and the animalculæ that Pfeiffer five years later reported[1] from the pustules, will appear in many other eruptions, and will not be treated of on this occasion.

It appears that some of Pfeiffer's drawings, as well as Beale's "bioplasts," indicate serious misinterpretation of the microscopic pictures.

L. Voigt[2] described, in 1885, three different forms of cocci from smallpox pustules. All liquefied gelatin, and Voigt considered one of them the probable carrier of the contagion. No definite results were, however, obtained.

In 1882, Pohl Pincus[3] proved that specific micrococci pass through the epidermis of the calf when the latter is inoculated therewith.

Hlava[4] considered the united attack by different pyogenic cocci the cause of the disease and eruptions, while Koch and Feiler were of the opinion that, although some of the saprophytic microorganisms in vaccine-lymph are pathogenic, they do not carry the contagion.

Crookshank[5] found in vaccine-lymph a great number of common saprophytic bacteria, but no specific organism.

Copeman[6] also published investigations, but found no specific carrier of the virus.

Rille,[7] in 1889, observed cocci in the vesicles and blood of persons suffering from varicella, but was unable to cultivate them.

It is very probable that Sternberg[8] was right in stating, in his text-book, that the etiology of smallpox still remains undetermined. Still, some of the investigations cited furnish very interesting points that will be valuable to those who wish to go over the field again.

Micrococci of different shape and character are, however, not the only bacteria that have been observed in smallpox and vaccinia. A few statements point toward the presence of other bacteria, namely, bacilli. Crookshank (loc. cit., 1892) mentions that he found in vaccine-lymph *bacillus pyocyaneus*, *bac. subtilis*, different bacterial forms, and a bacillus resembling *bac. subtilis*.

Dr. S. C. Martin[9] has described a bacillus of vaccine-lymph, the ends of which are rounded or square, and which may form micrococci (?) arranged in chains of five or six cells. He admits the possibility that both a bacillus and a micrococcus are present.

Coze, Feltz, and Baudoin[1] have discovered bacilli in the blood of variola. Upon injection of such blood into the veins of a rabbit typical symptoms of variola were produced.

In sheep-pox-lymph examined by Zimmermann,[2] three bacilli were found, one of which was very much like the *bac. amylobacter* van Tieghen. A second preparation contained a short-limbed bacillus; both showed large numbers of the *micrococcus vaccinæ* (or *variolæ*). All of Plaut's plates demonstrate bacilli which he was able to cultivate.

Toussaint's bacilli are mentioned in the dissertation by Plaut already referred to.

In April last vaccine-points were procured from Dr. Hewitt's vaccine-station, at Red Wing, Minn. A watery solution of the lymph adhering to the point contained, when examined by a magnification of 1160 diameters (Bausch & Lomb, Oc. C2, obj. $\frac{1}{12}$ oil-immersion), a few amorphous bodies, which assumed a yellowish color with iodin-potassium, iodid, and a few round bodies and irregular masses (probably nuclei or fragments of cells) dispersed in a clear, slightly-opaque fluid. I could distinguish among these bodies no micrococci or other bacteria, and no staining revealed any living organism. Some of the round bodies occasionally found (*i. e.*, in every second or third field of the microscope) may have been bacteria, but their nature was not revealed by the microscope.

A series of plate-cultures upon Pasteur gelatin[3] (10 parts of gelatin to 90 parts of Pasteur's fluid) was then arranged, but there occurred no development. Then test-tube cultures were made in Pasteur's fluid alone, and in beef-bouillon (one pound of meat to one liter of water) rendered alkaline with sodium chlorid. The vaccine-points were grasped with forceps, passed through a flame, and dropped into the fluid, which had been previously submitted to fractional sterilization, as in the usual preparation of culture-media. Great care was exercised, in order that no infection from without should take place.

On exposure to a temperature of 24° C. (75.2° F.) the culture-fluid would, on the first day after inoculation, become slightly turbid; on the second day the turbidity was increased, a thin film being formed upon the surface; and on the third day a grayish, highly-tenacious film made its appearance. Microscopic examination demonstrated the presence

[1] Die Protozoen als Krankheitserreger. Jena, 1890.
[2] Deutsche med. Wochenschrift, 1885, xi, 895–897.
[3] Vaccination, 1892. (Not seen.)
[4] Sbornik Lékarsky, 1887, ii, 96–105.
[5] "On the Bacteriology of Vaccine-lymph." Transactions Seventh International Congress of Hygiene and Dermogr., 1892, ii, 326–27.
[6] Loc. cit., *supra*, 319–326.
[7] Wiener klinische Wochenschrift, 1889, Nos. 38 and 39.
[8] Manual of Bacteriology, 1892, pp. 528–29.
[9] Boston Medical and Surgical Journal, 1893, cxxix, 589.

[1] *Vide* Magnin-Sternberg, Bacteria, 1884, 410, 464.
[2] Plaut: Das organisirte Contagium der Schafpocken, 1882, p. 22.
[3] Salomonsen: Bacteriol. Technology.

of colorless, non-motile bacilli, with a long diameter measuring from 0.6 μ–1 μ, and the short diameter from 0.2 μ–0.3 μ. During the first and second days they seemed to develop in separate colonies of from twenty to two hundred organisms each, although under the microscope many organisms appeared to be free and isolated. Macroscopically, the zooglea had, to a great extent, the same appearance as the film-vegetation of the yeast-like genus *mycoderma*, being folded and of a greasy aspect. On the fourth day fragments of the zooglea begin to descend to the bottom, and the macroscopic appearance of the culture remained, after this, unaltered for three weeks and more. During this period, however, the microscopic appearance of the bacilli became greatly modified.

This organism was found, with three exceptions, in examinations of sixty-five cultures from vaccine-points. Buttersack, whose recent investigations will be mentioned at the close of this paper, ventures the supposition that the specific organism of vaccinia and variola has not hitherto been detected because of its index of refraction being identical with that of the medium. I saw no reason for this supposition, and I am prepared to explain Buttersack's theory from my own observation. The bacilli that I observed have very much the same appearance as those found by Plaut.[1]

Already at the beginning of the development the bacilli bear spores. Each organism contains two spores, one at either end. This being the most conspicuous feature of the organism I assign it to the genus *Dispora*, established in 1882 by Kern, and name it *Dispora variolæ*. On the sixth day after inoculation free spores are found, both in the fluid and in the zooglea, but not before, although afterward, in the course of development. The spores are globular, highly refractive, and may be mistaken for what appear to me as vacuoles when a magnification of 2000 diameters is used. Still, the vacuoles are less refractive than the spores, and their form is rectangular (cubic) or slightly oval and a little irregular.

The same organism was also found in the lymph from a case of confluent smallpox kindly furnished by the Smallpox Hospital in Chicago. Of forty cultures in bouillon made from this lymph, only two failed to show the presence of the bacillus.

FIG. 1.

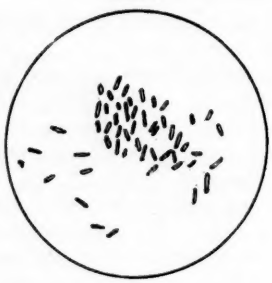
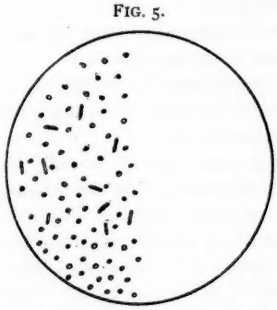


FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.



EXPLANATION OF FIGURES.—All of the figures are drawn from the pictures rendered by Bausch & Lomb, Oc. C2, obj. $\frac{1}{12}$ oil-immersion.

Fig. 1. *Dispora variolæ* growth in Pasteur's fluid, two days old.
Fig. 2. Same, four days old. Cells from surface-film.
Fig. 3. Same, eight days old. Growth in bouillon, spores being frequent.
Fig. 4. Same, twenty-five days' culture in bouillon.
Fig. 5. Same, thirty-five days' old culture in bouillon. Cells very scarce, free spores predominating.

[1] Loc. cit., Beilage i–iv b, especially ii a.

When cultures, both from vaccine and from smallpox lymph, were examined on the eighth day after inoculation, the organisms appeared to be crowded together in distinct masses, each cell being surrounded by a rather thick layer of a gelatinous substance. Free spores were abundant.

As the culture grew older the organisms gradually became longer and longer, and on the fourteenth or fifteenth day the culture presented the appearance shown in Fig. 4. The organisms formed long, thin threads. Spores were abundant, both *in situ* and free. The number of cells henceforth gradually diminished, and on the thirtieth day very few were seen, the spores predominating. When traces of this last stage of the culture were transferred, with the utmost precautions, into a new medium, development promptly followed as already described.

The following method of staining gave very good results: A small drop of the culture was placed between two covers and slightly pressed between them. The covers, having been separated in the usual way, were placed, moist side upward, under a bell-glass. When some of the fluid had evaporated the clean sides of the covers were placed three times, for a period of two or three seconds, in the immediate neighborhood of a flame, with the thin film which was to be stained turned away from the flame. When completely dry the covers were placed in alcohol for two or three minutes, and again dried under a bell-glass; then they were brought to float, film-side downward, on anilin-blue or anilin-violet for twenty-four hours, washed, dried, and mounted in the usual way.

While this organism presented the appearance of a specific bacillus-form, I was not convinced thereof until I had made a fractional culture in bouillon, which resulted in time in a uniform development in ten or fifteen out of twenty flasks; the control-tubes revealed no development.

Regarding the polymorphism of this species, I can state that I have observed no such swellings at the middle or ends of the long cells in old cultures as Martin[1] noticed in the bacilli found by him, or as Hansen[2] described for the bacteria producing acetic acid.

From the figures of *micr. vaccinæ* and *variolæ* that I have seen I am inclined to believe that this organism is not specific, but that it represents merely the free spores of *Dispora variolæ* mihi. I also believe that the facts in regard to the spread of smallpox, as well as the observations already recorded, lead to the conclusion that the spores are the main source through which both variola and vaccinia are reproduced.

[1] Loc. cit.

[2] Comp. Rend. Laboratoire de Carlsberg, 1894, iii, 265–327.

Buttersack[1] a short time ago published an account of certain bodies that occurred constantly in vaccine-lymph, and which may have some relation to vaccinia. He allowed lymph to dry on covers, and, having fixed the latter to the slides by mean of beeswax, he inspected the film by immersion and observed a network of fine threads, with small, refractive, round bodies. Landmann,[2] Dräer,[3] and Czaplewsky[4] interpreted Buttersack's discovery as threads of fibrin and other albuminates. I would, *à priori*, assume that Buttersack had seen the thread-stage of the organism found by me. Not having seen Buttersack's illustrations, I can, however, say nothing certain about this.

Experiments extending the knowledge of the natural history of the organism which I suppose to be the primary cause of vaccinia and variola are in progress. It is also within the range of my program to study the possibility of preparing vaccine in the laboratory.

[1] Arbeiten a. d. kais. Gesundheitsamte, 1894, ix, 96–110.

[2] Hygienische Rundschau, pp. 433, 434, 1894.

[3] Centralbl. f. Bakteriol. und Parasitenkunde, 1894, xvi, 561–564.

[4] Ibidem, pp. 921–925.

SIX INSTANCES OF COLOR-BLIND WOMEN OCCURRING IN TWO GENERATIONS OF ONE FAMILY.

BY WENDELL REBER, M.D.,
OF POTTSVILLE, PA.;
FORMERLY CLINICAL ASSISTANT WILLS EYE HOSPITAL, PHILADELPHIA, PA., ALSO TO THE ST. AGNES HOSPITAL, PHILADELPHIA, PA.

THE occurrence of congenital color-blindness among women is, according to most experienced observers, a rare thing. Soelberg-Wells[5] holds that "the congenital form is frequently hereditary, affecting several generations of the same family; that the hereditary form comes oftener from the mother's side than the father's; that the males are affected much oftener than females, though in some families only the latter were found color-blind."

Meyer[6] fixes the relative frequency in men and women at from 3 to 5 per cent. in the former to less than 1 per cent. in the latter. He states that the condition is hereditary and is transmitted on the mother's side, although she herself is not affected with it.[7]

Wolfe,[8] after quoting full comparative statistics as to the frequency of the anomaly in men, goes on

[5] Text-book (Bull), 1883.

[6] Text-book, 1887.

[7] This would seem to be in accordance with a similar law that obtains in a peculiar form of optic-nerve degeneration described by Leber, Habershorn, Norris, and Gould, and aptly designated by the last "Homeochronous Hereditary Optic Atrophy." (*Vide* Annals Ophth. and Otol., 1893, p. 303.) A law similar to that mentioned seems to prevail in hemophilia and also in idiopathic muscular atrophy.

[8] Text-book, 1882.

to say, "Females are generally considered to be rarely deficient in color-perception." De Schweinitz[1] remarks that color-blindness is extremely rare in women. Fuchs[2] merely points out the relative immunity of females, and remarks that this perhaps finds its explanation in the continuous education of color-perception (going on through countless generations) to which the members of the gentler sex are subjected from their early childhood.

Noyes[3] fixes the frequency in females at ½ per cent.

Fontenay[4] (Copenhagen), working in Denmark, found the condition in ⅔ per cent. among 3819 women, and Jeffries,[5] of Boston, in 13,458 carefully-conducted examinations on females in the schools of Boston, found but 0.006 per cent. of this number presenting subnormal color-perception.

In view, therefore, of the infrequent appearance of this anomaly, it is thought that the following history may be of interest, and deserves recording:

Mrs. S., about fifty years of age, a physician's wife, complained of asthenopic symptoms that had recently been sufficiently annoying to induce her to seek counsel. Vision in both eyes was slightly below the normal. The right eye presented a small degree of hyperopia, and the left eye a moderate degree of hyperopic astigmatism (simple), which when corrected, gives her normal visual acuity. With the addition of sph. 2.00 D. for the near point, she reads type 0.50 D. from 10 to 17 inches.

Ophthalmoscopic examination without a mydriatic shows both nerves a trifle pallid, each presenting a deep eccentric physiologic excavation, and being shallowly cupped to the temporal side. The scleral ring was broad and well-marked to the outer side. The vessels were normal.

During the examination Mrs. S. volunteered the information that for as long as she could remember her color-sense had been defective. She stated further that two of her sons were similarly affected, and my pleasure at meeting a color-blind female was greatly enhanced when the patient announced that two of her sisters had the same peculiarity.

Qualitative investigation of the color-sense with Oliver's series of wools revealed complete confusion of the dark-green, dark-red, and brown. The lighter shades were better distinguished. Rose and blue were in like manner confounded. The conditions just noted were found exactly reproduced in her youngest son's eyes.

At my request, the patient furnished me with a fairly full account of the family ramifications, extending through four generations, and designating the affected individuals. It was then learned that all of the patient's sisters (numbering three) exhibited impaired color-perception, and that her only brother also possessed the defect. Thus, in this one branch of the family, all are the subjects of subnormal color-perception. The explanation of the involvement of this whole family is to be found in the history of their antecedents.

Their father was one of a similarly-afflicted family. Both his brothers and his three sisters were color-blind, a most rare occurrence.[1] Moreover, their father married a woman who, though possessed of normal color-sense,[2] had an only brother who was entirely color-blind.

Unfortunately, the history could not be traced back to the patient's paternal grandparents. She says that the grandparents on her mother's side were not color-blind as far as she had been able to gather the facts.

As to the patient's children, two of her three sons are affected, while her daughter is immune. It is worthy of remark that one of the affected sons is a twin-brother to the one who is free from the defect.

In reviewing this genealogy the following interesting features are found:

1. The involvement of two entire families in color-blindness.

2. The occurrence, within two generations, of six cases of subnormal color-perception in females.

The unusual prevalence of this affection in the family of the patient's father can only be theoretically accounted for. No facts concerning the parents have as yet been obtained. It is reasonable to assume, however, that one or perhaps both of the paternal grandparents were deficient in color-perception.

In the matter of the family of which our patient is a member, the evidence is positive and clear on her father's side, and circumstantially strong on that of her mother. Her father was a member of the before-mentioned afflicted family. Her mother, though possessed of normal color-sense, had a color-blind brother, and the presumption that she was descended from color-blind stock is allowable. According to many histories of color-blind families, there is a tendency on the part of the mother, descended from color-blind stock, to impress her progeny with the defect of her antecedents, and in the case of our patient's mother this influence must necessarily have been greatly intensified by the congenital color-blindness of her husband. I think that in this way the participation of all the children in the hereditary impression can be explained.

The appearance of so many color-blind females is of no inconsiderable import, inasmuch as it portends deficient color-perception in the males of the rising generation of this family, as shown in two of the sons of our patient.

In reference to the different ideas concerning the

[1] Text-book, 1892. [2] Text-book, 1893.
[3] Text-book, 1890.
[4] Archives of Ophthalmology, vol. x, p. 11.
[5] School Document, No. 13, Boston, 1880.

[1] I have not found a parallel case in the literature at my command.
[2] As far as could be ascertained from members of her family.

transmission of color-blindness, this genealogy only serves to produce confusion. It does not support the inference of Meyer[1] that "color-blindness is transmitted only on the mother's side, though she herself is not affected by it." We have in this history a color-blind female bequeathing the defect to two of her sons. The history, considered as a whole, would seem to conform more to the general statement quoted from Soelberg-Wells, that "the congenital form of color-blindness is frequently hereditary, affecting several generations of the same family; that the hereditary form comes oftener from the mother's side than the father's; that males are affected oftener than females, though in some families only the latter were found color-blind."

I appreciate the fact that this genealogic tree has not been fully developed, and that many interesting facts may be brought out by a fuller study of the family histories. If the further investigation of this subject brings forth fruit, I purpose basing a future paper on the additional facts.

ALCOHOL AND PNEUMONIA.

BY JULIUS POHLMAN, M.D.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF BUFFALO, N. Y.

THE action of alcohol on the different organs of the human body has been investigated so carefully and systematically that it almost seems impossible to add anything new on the subject. Looking over the literature we find abundant evidence of careful study of the question in its bearing upon heart, brain, liver, kidneys, and the digestive tract; but, strange to say, the lungs have apparently escaped attention, although a few straggling notices hinting at the true relation between alcohol and the respiratory organs have been published at different times and in different countries. As early as 1855 Dr. B. Cohen (*Zeitschr. für klin. Medizin*, Breslau, 1855, p. 401) maintained that the abuse of alcoholic drink is a strong predisposing cause of death when the drinker is attacked by pneumonia. Out of fifty-seven such cases treated at the Breslau Hospital, twenty-four died. Another notice confirming this statement is given by Dr. William Osler in a report on pneumonia in the Pennsylvania Hospital. According to this authority, pneumonia is, as a rule, fatal if a drinker is attacked when under the influence of alcohol; if cases of chronic alcoholism are excluded, the death-rate for that disease in the Pennsylvania Hospital, 29 per cent., would be only or 10 per cent. A few reports are on record of autopsies made on children who died after drinking large quantities of strong drink, stating that the lungs were dark and congested, but no experimental evidence has been given as to the action of alcohol in the production of pathologic conditions of the lung-tissue.

In order to determine this question I made a series of experiments during the winters of 1890, 1891, 1892 and 1893, and the results are embodied in this report.

The animals used were dogs, male and female, mongrels of very mixed origin, picked up from the streets by the city dog-catchers. They ranged in weight from fifteen to twenty-five pounds, and were all apparently in good health, if voracious appetites and strong fighting propensities can be accepted as indications of physical well-being. Twelve animals were used during 1890–91, ten the following winter, and nine during the winter of 1892–93.

The experiments were simple. The animal, carefully etherized, received an injection of a quantity of commercial alcohol, varying from one dram to one ounce, into the trachea just below the larynx, by means of a large hypodermic syringe. After the narcosis had passed away the symptoms were noted, from hour to hour first, from day to day later, and post-mortem examinations made after a certain time, varying from half an hour to four weeks, gave evidence of the internal conditions of the respiratory organs.

The general symptoms were invariably the same, differing in severity only according to the quantity of alcohol given and the age, weight, and strength of the animal experimented upon. The terms age and strength are used guardedly, for the temptation is strong to say "idiosyncrasy;" otherwise it is difficult to account for the different effects produced by equal quantities of alcohol upon dogs of the same weight. For instance, two dogs, each weighing twenty-five pounds, were treated with a dose of two drams each, and one died after one hour, and the other after six hours; while two other dogs of twenty-four pounds weight, and two more weighing respectively fifteen and eighteen pounds, received the same quantity, two drams each, and all four survived and were as well as ever after four weeks. One dog, weighing eighteen pounds, died in five minutes after receiving two drams of alcohol, while another, of fifteen pounds weight, took *one ounce*, and recovered.

So, whether there is a similar idiosyncrasy in dogs as there is in men, or whether the differing results were due to age and strength of the animal, is an interesting question open to discussion.

The symptoms in all dogs experimented upon were alike and as follows: difficulty in breathing, increasing with the advance of the inflammation set up in the respiratory passages by the action of the alcohol, until it finally resembled a wheezing noise and called into activity all the accessory respiratory muscles; stethoscopic examination gave

[1] Already quoted.

evidence not only of the difficulty which the air encountered in trying to force an entrance into the bronchial tubes and air-vesicles, but also of the tumultuous beating of the heart while attempting to drive the blood through the capillaries of the lung. Copious expectoration of a bloody, frothy mucus indicated the progress of the disease.

As the animal weakened it usually pressed itself against the wall of the room with the thorax as much as possible resting on the floor, and displayed a constant desire for cold water, probably due to the feverish condition induced by the inflammation. No temperatures were taken, for after three thermometers had been broken by the struggles of the animals the attempt to gain correct information on that point was abandoned.

Post-mortem examinations always showed the lungs dark and congested, solid in some places, so solid indeed that these parts sank when thrown into water.

Cutting into the lung, the air-passages were found to be always filled with bloody frothy mucus; even the animal that died five minutes after the injection presented the same symptoms. The lungs were dark and congested and full of bloody mucus, showing the rapidity of the inflammatory processes and clearly demonstrating how *acutely sensitive the respiratory passages are to the action of alcohol.*

There is probably no danger of meeting contradiction when we define pneumonia as an inflammation of the lung-tissue; whether of bacterial or traumatic origin, of lobar or lobular form, need not concern us here, as long as we are satisfied that these inflammatory processes produce the phenomena observed in the respiratory passages during an attack of the disease.

Alcohol introduced into the lungs of dogs sets up a pneumonia more or less severe. Whether we call it a traumatic pneumonia, or a broncho-pneumonia, or coin a new name for it, will not change the fact.

On microscopic examination of such lung-tissue the air-tubes and vesicles are found to be partially or completely filled with immense numbers of red and white blood-corpuscles and large quantities of mucus, and present the same picture as that obtained from a slide made from the lungs of a child that died from broncho-pneumonia, and although one is from a human being, the other from a dog, the former representing a well-known type of disease, the latter an artificial form, the similarity between the two is certainly striking enough to prove that the pathologic condition of the lung-tissue is the same in both, and that the alcohol has induced inflammatory processes very closely resembling, if not absolutely like, those found in attacks of broncho-pneumonia in human beings.

Admitting then that alcohol *can* produce all the grades of inflammation of the lung-tissue from the mildest to the fatal form, according to the quantity used, we can perhaps understand to some extent why drunkards if attacked by pneumonia will succumb more speedily than the patient of temperate habits.

By virtue of the alcohol coursing with the blood through the lung-capillaries on the one side, and the alcohol exhaled with the breath, be it ever so little, filling the air-vesicles and air-tubes on the other side, the lung-tissue itself, so sensitive to alcohol, stands between two fires, so to speak, and must be in a chronic state of semi-engorgement, of mild inflammation, like the highly-colored nose of the drunkard or the engorged mucous membrane of his stomach.

Certainly such a state of affairs will change the normal condition of the cells of the lung-tissue and reduce their vitality, and in proportion their power of resistance to external influences; and if now a severe, acute form of inflammation, such as pneumonia, is added to the pathologic conditions already existing, the lungs find themselves powerless against the attack of the disease, and the drunkard's death-rate from pneumonia illustrates the time-honored law which says that an organ or organism weakened by previous ills cannot compete with normal organs in fighting the battles against acute diseases in the struggle for existence, and the man of temperate habits, with lungs free from alcoholic inflammation, has from five to seven chances for recovery from pneumonia when the drunkard has only one.

CLINICAL MEMORANDA.

SOME RHINOLOGIC CASES OF INTEREST.

BY WILLIAM MARTIN, M.D.,
OF BRISTOL, PA.

THE object of this paper is merely to take a few cases of interest from my case-book that are in a way unique, if not a little unusual, and present them briefly.

CASE I is one of *angioma of the naso-pharynx.*—The patient, Annie M., aged about forty years, came to my office during the summer of 1893, complaining of a decided obstruction in the nares, compelling her to breathe through the mouth, and also of a feeling of fulness in the upper part of the throat. She had noticed these symptoms for quite a long time, but considered them as due to a catarrhal trouble which she had been aware of for some years. Noticing that the symptoms were becoming more decided, and seeing an occasional discharge of bloody mucus, she considered it time to consult a physician. I could get no history of a decided epistaxis, although the oozing seemed pretty constant.

The symptoms other than these were those of an ordinary hypertrophic rhinitis which were of no diagnostic value. Upon examination I found anteriorly the nasal chambers showing evidence of a mild type of this form of rhinitis, with considerable turbinated hyper-

trophy toward the posterior part. Upon inspection of the post-nasal space by means of the rhinoscope, the condition of things was immediately apparent.

The object or growth may be described as follows: A fairly-large, rounded tumor, filling pretty completely the right side of the upper pharyngeal space, and of course hiding from view the opening of the Eustachian cana of that side, and extending a little beyond the median line.

The color was red, showing great vascularity. Upon close inspection the tumor was found to pulsate synchronously with the heart-beats. By gentle use of the probe the attachment was determined to be to the posterior turbinated tissue, and of a slender character, as the tumor was movable. Even with gentle manipulation it bled a little, so that I was careful not to persist in my examination. To my mind the diagnosis was quite apparent.

I informed my patient of the character of the trouble and the dangers attendant upon operation, although this has been done successfully. An appointment was made, as she seemed willing to take the risks, but from that time to this she has not come back, so I cannot tell the outcome of her trouble. To me the case was of great interest because of the rarity of occurrence of this form of tumor.

From what I can find by searching my stock of literature the most complete article on the subject is one by Seiler.[1] He mentions a list of rhinologists who have had cases in their practices, and says of them, "but a careful examination of the clinical features of all these cases as reported leaves us but ten in all which were undoubtedly angiomata, and from which number our knowledge of this rare form of intra-nasal neoplasm is derived." These refer particularly to the growth met in the nasal chambers; while this I feel assured was attached within, yet the major portion was in the post-nasal space. Later in his article Seiler refers to the importance of distinguishing this form of tumor from a true hypertrophy of the turbinated tissue, because of decided difference in the result of operative interference. The clinical distinction is in the pulsation, which is always present in true angioma; otherwise the two may appear very much alike. The other growths to differentiate between are those presenting angiomatous features, such as telangiectatic polypus or angio-sarcoma. The same pulsating condition is the distinguishing feature here also. It is recognized that operative interference is dangerous and has proved fatal, yet it is important in some cases to remove the growth. When this is done, the preferable way is by the cold-wire écraseur, and the manipulation must be very gentle and carefully slow.

Seiler prefers to allow the excised tissue to remain *in situ*, undisturbed for from twenty-four to forty-eight hours before removal. He mentions also that partial excision is often followed by complete disappearance through post-operative shrinkage. If this description establishes my diagnosis as correct, this will add one more case to the now very small list of angiomata of the nasal cavities.

CASE II. *Foreign body in the nose.*—The interest of this case is not because of any rarity of occurrence, but from the fact that the condition of the nasal chamber simulated the atrophic form of rhinitis, and also in the fact that it was mistaken for this by another physician.

The patient, Beatrice C., a child of two-and-a-half years of age, showed evidence of a nasal obstruction, with an excessive amount of offensive discharge that seemed to increase in amount and character. This gave the impression to the parents of an ozena, and it was for this trouble that they consulted me. The condition was first noticed a year previously, the principal symptoms being apparently pain, and subsequently obstruction.

Upon being questioned, the mother recollected the child playing with shoe-buttons at about that time, but had overlooked the matter. After cleansing the naris with a warm alkaline antiseptic spray, I could feel with a probe a resisting object that gave the impression of necrosed cartilage. Upon further examination under chloroform, as this was necessary, I determined the object to be a shoe-button tightly lodged in the upper sinus, rather posteriorly, and only after bringing to bear considerable force was it dislodged. It proved to be a shoe-button apparently swollen and porous, which fact, no doubt, accounted for the sensation of necrosed cartilage given by the probe. Following the extraction there was considerable hemorrhage and flow of offensive muco-pus. The cavity was thoroughly cleansed, and a bland alkaline antiseptic spray ordered. Healing was natural, and, as far as I can learn, there have been no subsequent nasal symptoms, and the child is growing nicely and seems well. I may say before leaving this case that the child was seemingly in poor health and growing worse gradually, and, as there is a tuberculous family history, the parents became quite alarmed.

CASE III. *Deviation of the septum.*—Herbert ——, aged about twenty-six, a civil engineer, has complained for some years of entire closure of one nostril. He was told by a physician of the town in which he lived that the case was one of polypoid growth, and an operation was talked of. Before this was decided upon he was persuaded by one of his relatives to consult me about it. Upon examination the appearance was as follows: Anteriorly the right side was a large cavity with decided turbinated hypertrophy, no doubt from doing double duty in the performance of respiration. The left was no longer a cavity, being filled entirely by the decidedly deviated septum, which was united to the hypertrophied turbinated tissue, and to such an extent that a small probe could not be introduced. The septum was deflected from above downward and, as well, from the anterior to the posterior portion, making an angle that seemed from the right side very acute, but from the left less so, because of the cartilaginous thickening. The man expressed a desire to receive treatment; so a preliminary course of local applications was instituted, and these were followed by the septal operation. This was done very much after the usual manner, the first step being to make a way through the turbinated tissue with the galvano-cautery, sufficiently large to admit the septal punch and other necessary instruments.

Following the straightening of the septum, the turbinates on both sides were thoroughly cauterized, and the parts cleansed and dressed.

The only means used to hold the septum in place was

[1] System of Diseases of Ear, Nose, and Throat, vol. ii.

a wad of cotton packed snugly, and changed sufficiently so as not to become foul. A 10 per cent. solution of cocain was all that was required for anesthesia.

At present writing, almost nine months since the operation, the septum seems strong and in proper position.

While this condition of the septum is not of infrequent occurrence, it certainly is of interest, because of its frequency, and shows that care must be exercised in the examination of the nasal cavities, not only to establish a proper diagnosis, but also to enable one to extend the proper kind of relief.

CASE IV. *Split septum.*—This patient, George A., a mechanical engineer, came to my office with a history of having been thrown forcibly from his bicycle, striking his head and face, the latter receiving the force of the fall, especially the nose, which soon became very much swollen, while the breathing was entirely obstructed. After about a week's suffering, being absent from home at the time of the accident, he came to my office.

Upon examination I found the condition as follows: Externally, the nose was very much swollen, and internally, both the cavities were occluded. Examining more carefully, the occlusion was found to be due to a separation of the two plates of the cartilaginous septum with an exudate filling the intervening space, and giving the whole the appearance of bagging. The probe would produce fluctuation, and by some force the plates could be partially approximated. The turbinates were normal, so that there was no doubt about the diagnosis.

The treatment consisted in pressure over the parts, to approximate the plates, and local remedies to allay the inflammation and to promote absorption of the exudate. These were employed daily for a couple of weeks, and then occasionally. The exudate was absorbed, and no doubt union between the plates must have taken place, for when the treatment was discontinued the septum seemed almost normal, except for a slight thickening, which may in time disappear.

This form of accident is very unusual if not rare, as a separation of the plates could only be brought about by direct force against the bridge of the nose, and even with such a force it does not always result. The literature on this subject is scant, as far as I can find. Mention is made by Seiler[1] of this condition, but it is treated very briefly. This refers only to the splitting by traumatism, as it is possible for this to happen as a pathologic condition.

CASE V. *Angio-neurotic edema.*—Emma C., aged about twenty-eight years, came to my office complaining of an ordinary hypertrophic rhinitis, for which she was treated in the usual manner. The catarrhal inflammation was gradually improving, and everything seemed satisfactory, when one morning, to her alarm, she noticed a puffing of the tissue under the left eye. This swelling extended rapidly, and in a short time the whole side of the face was swollen, closing the eye tightly. There were no subjective symptoms other than a feeling of tightness and awkwardness of the parts, with a slight burning sensation. Of course, vision in the one eye was suspended temporarily, which annoyed her very much. She could not account for her condition in any other way than, as she expressed it, "the catarrh has gone to my eye." The condition was recognized and an explanation attempted, but owing to ignorance on her part, combined with a nature rather of a melancholy character, the impression could not be dislodged from her mind, and fearing that the swelling might be driven to other parts she discontinued the treatment; so I lost sight of the case, although not until the swelling had subsided, which was in about five days. The only treatment for this condition consisted of frequent applications of hot water to the swollen parts.

While this case does not strictly come under the heading of this paper, it is connected with the subject, inasmuch as it occurred in one of the patients under treatment for a nasal condition, and was probably due to some excitation of the nasal nerve-terminals in a neurotic patient, from the use of the applicator. It certainly is of interest in a general way, as the present knowledge of this condition is not excessive and the number of cases reported is not large, while the condition is not a rare one. Probably the time will come when we shall understand the subject more thoroughly, and until that time each case reported must be of some interest.

[1] System of Diseases of the Ear, Nose, and Throat, vol. ii.

SOME ADDITIONAL EXPERIENCES WITH BEHRING'S DIPHTHERIA-ANTITOXIN AND SOME REMARKS ON THE USE OF LOEFFLER'S TOLUOL-SOLUTION.

BY EDWIN J. KUH, M.D.,
OF CHICAGO, ILL.

IN the *Journal of the American Medical Association* of December 1, 1894, I published the following brief report of a seemingly promising case of laryngeal diphtheria that terminated fatally, however, in spite of the reasonably prompt injection of the antitoxin:

Freda H., a robust girl, aged seven years, complained of hoarseness on November 6th, and remained indoors without symptoms of fever until November 11th. On that day she took to her bed, and Dr. F. W. Mercer saw her for the first time. On the same afternoon I saw her in consultation with Dr. Mercer. During the the day the temperature had ranged at slightly over 102°. The fauces *were entirely normal*, with the exception of a small, white, loose deposit on both tonsils, which was easily brushed away with cotton mounted on a probe. The child was hoarse, and the larynx somewhat stenotic. There was no retraction of the chest upon inspiration. Bronchitis existed in the larger tubes. Examination of the larynx was very unsatisfactory, because of an unusually depressed epiglottis and the child's intolerance of laryngoscopic examination.

The next morning, November 12th, the child coughed up a piece of membrane two inches in length, one-half an inch in width, and one millimeter in thickness. Laryngeal respiration was but slightly improved, and shortly after became very difficult. The temperature was about as before, but the pulse-rate became as high as 165. I saw her the same afternoon with Dr. Mercer, and injected ten cubic centimeters of Behring's antitoxin No. 2. A few hours afterward Dr. W. K. Jaques performed intubation. Cultures taken from the larynx showed the presence of Loeffler's bacilli.

On the morning of November 13th the temperature reached 104.5°, the pulse-rate was not lower, and the lungs were filled with fine crepitant râles.

This rapid inception of broncho-pneumonia led to a fatal issue at midnight of the same day. We could not observe that the injection of the antitoxin had made any

impression whatsoever on the pulse or temperature of the child.

This unfortunate case must, however, not be considered as evidence against the efficacy of Behring's remedy, as the result was evidently clouded by the complication. The child did not die of diphtheria but of broncho-pneumonia.

Since then my experience with the remedy has been more favorable.

Eleanor B., aged five years, daughter of Dr. B., was visited December 10th by a cousin who had had diphtheria, but from whose throat the membrane had disappeared eighteen days previously, and cultures from whose throat had finally been pronounced free from Loeffler's bacilli. On December 16th the child, who was visiting relatives in the suburbs with her brother, aged eighteen months, became ill with diphtheria. She was brought to the city the following day, and was seen by me in consultation with Dr. W. S. Christopher. We found moderate swelling of the submaxillary lymph-glands, patches on both tonsils and on both sides of the posterior pharyngeal wall extending upward toward the post-nasal space. The systemic infection was slight, and the temperature-maximum did not exceed 102°. Cultures gave an almost pure growth of Loeffler's bacilli. I injected 600 antitoxin normal units on the 17th. The membranes began to exfoliate on the following day, and disappeared entirely within forty-eight hours after the injection. Pulse and temperature became normal on the 18th. Ten days after the injection the child developed an extensive erythema. During the short course of the disease it was deemed expedient (with all due apologies to Prof. Behring) to treat the throat locally with Loeffler's toluol-solution.

Three days after my first visit Mrs. B., the child's mother, complained of excessive prostration and some tenderness in the throat. The right tonsil, concealed in the palatal folds, was found covered with false membrane, from which a fragment was easily removed. From this piece of membrane I received the most exquisite pure culture of Loeffler's bacilli I have ever grown from the throat. An application of Loeffler's solution was immediately thoroughly made to the surface of the diphtheric tonsil, and within a few hours the temperature declined from 99.5° to normal. On the following day the temperature rose to a maximum of 100.4°, and more membranous patches were seen farther to the left on the posterior pharyngeal wall. They were treated every three hours with applications of toluol, and the antitoxin was reserved for an aggravation of the disease, which, however, did not occur, as within forty-eight hours the patches disappeared entirely.

December 21st the younger child of Dr. B., aged eighteen months, developed a temperature of 101°. The child had been kept with the relatives (already mentioned) in the suburbs for purposes of isolation, but was now brought to the city because it was feared that he also was developing diphtheria. The appearance of the throat on the 21st certainly gave the most cogent reasons for that belief; for though no membrane had yet formed we were prepared to find it there the following morning. Unfortunately, no cultures could be obtained from the child's throat, because he had a knack of filling his mouth and throat with saliva in order to ward off attempts at examination. He received a preventive injection of the antitoxin, after which on the following day all malaise, from which the child had been suffering on and off for a week, disappeared. In this connection it might be mentioned that in the family in which the children lived before being transferred to the city a child, aged fourteen years, developed diphtheria on December 24th, probably traceable to contact with Dr. B.'s children.

Ursula S., aged fourteen years, was seen December 19th through the courtesy of Dr. J. W. Dal. She, as well as the numerous other children of the family, had been suffering from hoarseness for about a week. Her condition on the 19th of December was such as we see in laryngeal diphtheria. Both tonsils were covered with patches which had not yet become confluent, and on each side of the pharyngeal wall a membranous deposit extended downward. The child was quite croupy, and the laryngeal affection such as to suggest the probable necessity of intubation within twenty-four hours. The culture-tube and the microscope confirmed the diagnosis of Loeffler's diphtheria. In this case there was a preponderance of other micro-organisms in the culture, among which a capsule-diplococcus was conspicuous. I injected 1000 antitoxin normal units and Dr. Dal kindly made regular applications of toluol to the tonsils and pharynx. The membrane loosened within the next twenty-four hours, and the constitutional symptoms, which had not been severe, promptly improved. Two days after the injection the patches had almost disappeared, although the hoarseness still persisted to some extent. Toluol was then gradually discontinued and a spray of corrosive sublimate substituted. On the afternoon of December 24th the child suddenly became worse, and on Christmas day there were again two deposits on the pharynx, with a return of the threatening laryngeal symptoms and considerable involvement of the submaxillary glands. I again injected the antitoxin (10 cubic centimeters of Behring's No. 1 solution), with equally prompt response. The child continued to improve, and further recovery was uneventful with the exception of an urticaria-rash, which subsided in a couple of days.

Sydney R., aged thirteen years, spent a week in a house at Terre Haute, Indiana, in which diphtheria had occurred six months previously. He returned to Chicago December 31st, complaining of pain in the throat and general lassitude. I saw him the same night, and found a suspicious patch on the right tonsil, which I brushed thoroughly with Loeffler's toluol-alcohol-iron solution. The next morning the membranous deposit extended over most of the pharyngeal wall and to the left tonsil. The membrane on the right tonsil, to which toluol had been applied the previous night, had mostly disappeared. I injected nine cubic centimeters of Behring's antitoxin No. 1, and ordered the toluol-applications to be continued. Within the next twelve hours there was a continuous increase of the exudate, with extension slightly above the palatal arch; the temperature was 102.5°, the pulse 120, and there was intense somnolence. At that time the impression of the case was such as under ordinary circumstances would have offered a very grave prognosis. On the morning of January 2d, however, two-thirds of the membrane had come away; the temperature was elevated but slightly above normal, and the boy was bright

and cheerful. On January 6th all traces of pseudo-membrane had disappeared. In this case the diagnosis of Loeffler's diphtheria was verified in the usual way. The boy's mother, who had been seriously exposed before I saw him, had a rise of temperature on January 2d, due to an inflamed throat, but, possibly owing to applications of toluol, did not contract the disease.

It seems to me rather important to mention that after the application of Loeffler's toluol-solution, scattered, filmy, and somewhat tenacious grayish deposits appear in the throat, which are not diphtheric, but due to some chemic action of toluol on the secretions and epithelium of the throat. It is necessary to guard against the error of interpreting these chemic deposits as new invasions of the disease.

Toluol seems to me destined to become a very important auxiliary treatment in conjunction with the antitoxin in the mixed infections of diphtheria. In the pseudo-diphtheria of scarlet fever it will probably be classed as a supreme local remedy. Unfortunately its pungent qualities will exclude it from application in nasal and pharyngeal invasion of the disease. The early diagnosis and treatment which the future will exact from every conscientious physician will naturally be a safeguard against infections beyond the reach of a combination of antitoxin and toluol.

There has until now been no local abortive treatment of acute follicular tonsillitis, the claims made for guaiacol to the contrary notwithstanding. Loeffler's toluol-solution has aborted all of the cases of acute follicular tonsillitis within my notice during the past weeks, two or three of these being particularly severe.

The introduction of this remedy will naturally lose in éclat by being overshadowed by the antitoxin. It is fortunate that we have become so suddenly doubly enriched; for after the smoke has cleared away we shall, I believe, realize that not every case of diphtheria should be treated with injections of the antitoxin, which are not so harmless as they were at first supposed to be. Each of the two remedies will find its sphere, and frequently they will be used in combination.

I am indebted to my brother, Dr. Sydney Kuh, for his kind assistance in establishing the microscopic diagnosis in these cases.

A CASE OF ENTERIC FEVER OCCURRING IN ADVANCED PREGNANCY.

SERVICE OF S. S. STRYHER, M.D.,
PRESBYTERIAN HOSPITAL, PHILADELPHIA.

[Reported by P. M. ASHBURN, M.D., Resident Physician.]

THE following case is interesting as showing the course of typhoid fever during pregnancy, some of the difficulties that may attend its treatment, and the usual result.

The patient was a young white woman, twenty-two years of age, who was married and had had one child, which is living and healthy. Her family history is good, and she had never been sick before. She was brought to the hospital after two weeks' illness, with fever, diarrhea, and cough, from one of a row of houses from which we had removed another patient with the same disease about two weeks previously. All the people in this row obtained their drinking-water from a common well, and all the houses had privy-vaults close at hand.

The patient was admitted August 6, 1894, and I will first quote the notes made at the bedside during her sickness.

On admission the patient complained of fever, cough, and diarrhea, and said she was about seven-and-a-half months pregnant. Her temperature was 104.2°, the pulse 152, the respiration 52. She was of medium size, and weighed about 125 pounds. The skin and mucous membranes were of good color, the cheeks flushed, the pupils normal and reacting to light and distance. The tongue was dry and coated with a brownish-white crust. The pulse was rapid, rather weak, of low tension, and somewhat dicrotic.

The chest was well formed, the lower part wide from abdominal distention. The respiratory sounds were harsh, especially posteriorly. Examination of the lungs was otherwise negative. The heart-sounds were rapid but of good strength.

Hepatic dulness extended from the sixth rib to the costal margin; splenic dulness from the eighth to the tenth rib. The abdomen was large and bulged symmetrically; the linea albicantes were abundant. There was dulness on percussion in the umbilical and hypogastric regions, but elsewhere the note was clear. The uterus could be outlined, with its fundus at about the level of the umbilicus. Fetal movements could be felt. Fetal heart-sounds were heard in the right lower segment, the placental souffle on the left. The patient was being tubbed, and required from two to four baths daily. Her great complaint was of cough.

On August 11th the patient had at various times complained of severe abdominal pain, feeling like uterine cramp. It was on this evening severe while the patient was in the tub. On August 12th a systolic murmur was heard at the base and apex of the heart. On August 14th the patient had had twenty-one tub-baths. The temperature generally fell to 100° after a tub. The pulse became very rapid and feeble; after a tub the night before it was 204. Tubs were not now required as frequently as a few days previously. The patient vomited her medicine and milk, the vomiting being excited by cough. She still complained of cramps in the abdomen. She had been delirious at times. The face was now clearer than a few days before. The tongue was still coated and there were sordes on the teeth. The respiratory sounds were harsh and abundant dry râles were heard. The heart-sounds were rapid, and a systolic murmur was present at the apex. The abdomen was larger than at the time of the previous note. No rose-spots had been seen.

On August 20th the woman had been doing fairly well, the pulse and respiration being stronger and less rapid. The patient had complained a good deal of abdominal pains, but they were in a measure controlled by morphin. On the previous morning she had complained of greater pain, and at 9.10 A.M. her child was rapidly born. There was no tear and little bleeding. The placenta came away without trouble. The child lived for about half an hour. It was a male and measured 37.4 cm. in length and weighed 1030 grams. Its nails were well developed. The placenta was rather small and came away intact. Into one side of it there had been a hemorrhage, involving a strip about one inch wide by five inches long.

The patient's temperature remained high after the labor, and she was sponged several times with apparently little effect. The night before the temperature still continued high, and she was tubbed for twenty minutes, after which the temperature fell to 99°. The temperature continued to fall slightly until morning, and at 9.30 A.M. was 95.4°. The patient perspired profusely at 4 A.M. There was now no pain in the abdomen. The pulse was somewhat rapid but of good strength and volume. The tongue was dry. The heart-sounds were fairly strong; there was systolic roughening. The abdomen was moderately distended and tympanitic all over. The lochial discharge was very slight. The patient complained of the feet being painful and tender; the legs were slightly tender; the feet were white and very slightly swollen; the slightest pressure on them caused pain.

On August 23d, over the upper portion of the back and on the right shoulder was noticed a thick-set eruption of small, salmon-colored papules, many of them surmounted by very small vesicles. The eruption itched, but was now fading. After the last note the temperature remained subnormal, at one time being 94° by the mouth and not registering in the axilla. The tongue was dry, cracked, denuded in patches. The breath-sounds were slightly blowing at the right apex anteriorly, elsewhere somewhat harsh. There was roughening of the systole over the base and apex. The abdomen was only moderately distended, tympanitic, and tender in the epigastrium. The pain in the toes and feet had almost disappeared.

September 6th, the temperature had been normal since the last note. The patient was now being propped up in bed daily. The facial expression was good, the tongue clean and moist, the pulse accelerated but of good strength and volume, the heart-sounds clear and soft, the abdomen not distended or painful, and there was no vaginal discharge. The rash on the back and shoulders was desquamating and fading.

From this time on the patient had no trouble, and was finally discharged cured.

The treatment of this case was largely symptomatic. The ever-present uterine pains warned against too greatly shocking the patient by cold baths, while the high temperature, at almost all times above 104° in the axilla, being uninfluenced by sponging and small doses of antipyretics, necessitated something of the kind. She was therefore tubbed when the temperature reached 103°, being placed in water at 80°, and that gradually reduced to 70°, and kept there for from twenty to thirty minutes. The temperature would thus be reduced to about 100°. The rapid and weak pulse and respiration, occasionally rising to 200 and 55 respectively, and nearly constantly remaining at from 140 to 190 and 36 to 50, called for stimulation, while the fear of their action on the uterus forbade strychnin and kindred preparations, and whiskey, which was vomited as soon as taken by the mouth, could not be much used by enema. That element was finally partially controlled by the hypodermic use of digitalis and morphin in small doses and small and frequent dosage of champagne by the mouth. The irritability and crowding of the stomach also made it impossible for any food but very small quantities of peptonized milk to be retained, and that was very often rejected.

Finally, when it was hoped that the temperature might soon subside, it prevailed against the treatment, and hemorrhage into the placenta, with miscarriage, resulted.

Then followed another peculiar feature, in the subsidence of the fever by crisis twenty-four hours after the miscarriage, and its continuance for four days between 94° and 98°, by the mouth, and then gradually rising to normal.

The skin-eruption was also not uninteresting. The systolic roughening was interesting if not unusual. The urine contained albumin in small amount for a time, and thus caused slight anxiety, but no symptoms of eclampsia were manifested.

AN EXPLOSION OF TUBERCULOSIS, WITH A PECULIAR TUBERCULOUS LYMPHANGITIS, IN A BOY FIVE YEARS OLD.

BY BAYARD HOLMES, B.S., M.D.,
PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO.

IN January, 1888, a boy five-and-a-half years old was brought to me by a gentleman seventy-two years of age and a lady about fifty. I supposed that he was a grandchild, but was assured that I had before me the little fellow's father and mother. They gave me the following history. In the preceding June the boy had fallen upon a wood-pile and injured his left knee. During the succeeding month or two he had complained of lameness, which was then followed by a slight swelling over the left patella. Two months later numerous "swellings" appeared in various parts of the body. One of these swellings broke and discharged a thin pus at the outer border of the left gluteus maximus. The swelling over the patella opened a little later. The boy had run down all the time. Upon examination I found nine unopened tumors and two discharging tuberculous sinuses. There was an evident tuberculous inflammation of the sheath of the extensor tendons of the left toes; there was evident tuberculous disease between the astragalus and calcaneum of the right foot; there was a large superficial tuberculous lymphangitis in the left calf, and two similar accumulations upon the internal and upon the external border of the left quadriceps extensor femoris. There was one similar accumulation, about eight inches long, which seemed to be within the sheath of the semi-membranosus of the right leg. There was a large liquefied tuberculous adenitis in the right axilla, and there was a small tuberculous lymphangitis along the border of the right biceps. Each of these tumors was long and indistinctly fluctuating. The two open tumors were discharging pus, which was certainly tuberculous, and their exposed surfaces were covered with tuberculous granulations.

After proper preparation an operation was undertaken. The astragalo-calcaneal joint was first carefully opened and curetted. The extensor tendons of the left foot were then exposed and their sheaths trimmed out with scissors. These wounds were closed. The lymph-space abscesses were then carefully opened, trimmed out, and packed with iodoform-gauze. Last of all, the open abscesses were cleaned and curetted and treated by the open method of iodoform-gauze dressings. The operation required a little more than half an hour, and the patient recovered from the anesthetic promptly. During the

following two months the larger abscesses were scraped out three times, and all of them closed except four. Two new abscesses appeared in the neighborhood of the old ones, and these were opened and curetted. The patient lost strength very much during the first six weeks after the primary operation, and the weakness was exhibited by a curvature of the spine, which for some time promised tuberculous disease of the vertebræ. Nothing of this kind, however, occurred; and by good feeding and careful nursing the patient was completely restored. All the wounds were healed within six months after the primary operation. The patient is now (1894) a strong healthy boy, over-sized rather than under-sized, with no appearance of a return of the disease. The family has been warned that at between fourteen and eighteen years of age another explosion may be expected. The peritoneal cavities of two guinea-pigs were opened and a gram or two of the granulations from an unopened abscess were introduced on the sharp spoon. These guinea-pigs were examined after death and showed, one a large tuberculous peritoneal abscess with general tuberculosis, and the other a general miliary tuberculosis. The first was killed five weeks and the second seven weeks after inoculation.

In investigating the origin of this tuberculosis, examination was made of the cows from which the boy had been fed during the previous two years. This herd consisted of three "scrub" cows, with not the slightest sign of tuberculous disease. The udders were free from any lumps, nor could any history of sickness in the herd be obtained. The household was carefully examined, and not the slightest trace either of hereditary or acquired tuberculosis in any member of the family or in any servant could be elicited. Among the visitors, only one could be distrusted. This was a little girl, twelve years old, that had suffered a year before from scarlet fever, followed by suppurative disease of the middle ear. The ear was said to have been discharging during a six weeks' visit to the house, which occurred the spring previous to the onset of the disease in the little boy.

A year-and-a-half after the boy had entirely recovered the father consulted me in regard to an acute orchitis in the right testicle. This gave me a history that I had not heard before. Fifteen years before he had had an orchitis that came on rather slowly, never being particularly acute, and resulting in a round, spongy tumor at the side of the testicle. This tumor was punctured several times by the physicians who attended him, without the removal of anything except a little blood and a show of cheesy matter. For a year-and-a-half after the first appearance of the disease, the tumor remained the same size, giving rise to little pain but to much uneasiness. No exact diagnosis was given at the time, although the most prominent surgeons in Chicago were consulted. At last the tumor nearly disappeared, but remained as a hard lump at the lower end and inner side of the testicle. Upon various occasions it showed a disposition to enlarge and become slightly painful. When examined by me the right testicle was found distinctly atrophied, being hardly two-thirds the diameter of the left testicle. The head of the epididymis was as large as a walnut; it was hard and firm, except in one small place, where it appeared to fluctuate. A hypodermic needle was introduced into this fluctuating portion, and a fine granular pus was removed, which upon microscopic examination proved to be distinctly tuberculous. This small abscess was treated with iodin and iodoform injections, with repeated aspiration of the pus. A moderate degree of reaction followed, and subsequently the tumor returned to its dormant condition. The father died suddenly in his chair a year after this treatment. He was then seventy-four years old, and an otherwise apparently strong and healthy man.

A CASE OF TRIPLE MAJOR INJURIES.

SERVICE OF W. S. HUSELTON, M.D.,
SURGEON TO THE ALLEGHENY GENERAL HOSPITAL.

[Reported by JOSEPH C. OHAIL, A.M., M.D., Resident Physician.]

ON April 19, 1894, Phillip B., aged sixteen, employed in an iron-factory, was brought to the Allegheny General Hospital, suffering from a fracture of the left femur at its middle third, a fracture of the right leg near to and probably involving the knee-joint, and a terribly lacerated and broken left arm. From the middle of the forearm down nothing remained. The humerus was broken in several places, the seat of the upper fracture being at the junction of the upper and middle thirds. The upper fragment was projecting, and the skin and fascia were completely torn off up to the shoulder, presenting an appearance like that of a coat with its sleeve torn out. The man had been standing on a platform which ran along just beneath a hanging shaft, when in some way a belt which had been broken became wrapped around his arm. On the belt tightening he was caught and revolved about the shafting, which was eighteen inches from the ceiling. His legs were broken by striking the ceiling. He was released only when his forearm gave way.

The brachial artery could be seen pulsating along the greater part of its course. There was but little hemorrhage. The axillary artery was first ligated just below the subscapular. One end of the ligature was left to project beyond the line of the suture. The humerus was then disarticulated, and as much as possible of the muscular tissue about the shoulder was removed, so that the skin might cover the wound. Even after doing this there was much tension on some of the sutures. It is to be remembered that not a particle of skin was cut away.

The right leg was put on a double-inclined plane, and extension was applied to the left leg.

For the first three weeks the temperature ranged between 99° and 100°. The highest during the history was 100.8°.

The left leg was kept in extension for thirty-seven days. Union was complete. The right leg was kept on the double-inclined plane for fifteen days, then twelve days in an ordinary fracture-box, and then fourteen days in a plaster cast. Union was good, with no deformity.

The stitches of the amputation-wound were removed on the tenth day, and the ligature on the axillary artery came away. The wound had healed nicely save at two points where the tension had been too great. These granulated up quickly. Ten days later it was dressed, and fluctuation was noticed in the anterior flap. The cavity was punctured, and two drams of a puriform material escaped. This was not pus, but broken-down

tissue which had lost its vitality through the severe contusion of the part. The wound healed within a week.

On June 6th the patient sat up out of bed. A week later he stood on his feet and walked with assistance. On July 1st he was discharged. He then walked without cane or crutch, and limped but slightly. He was seen three months later. He had perfect motion in the right knee, and all other movements were normal. He walked with a barely perceptible halt.

MEDICAL PROGRESS.

Rupture of the Uterus from Dystocia Due to Congenital Displacement of a Kidney.—ALBERS-SCHÖNBERG (*Centralblatt für Gynäkologie*, 1894, No. 48, p. 1223) has reported the case of a tertipara whose first labor was difficult and terminated in the birth of a still child at term. The second labor was likewise difficult and protracted, but the child survived. In the third, in which the child presented by the vertex and occupied the second position, the pains suddenly ceased after having persisted for some hours, and vomiting, with symptoms of collapse, set in. The child was extracted with artificial aid, and upon efforts to remove the placenta it was found that the uterus had been ruptured. After delivery, however, the viscus contracted well, and there was no hemorrhage through the vagina. The child was a female of normal size, and weighed about seven pounds. For a time the woman appeared to do well, and a symptomatic course of treatment was adopted. In the course of twenty-four hours, however, vomiting recurred, grew progressively worse, and finally stercoraceous. There was complaint of abdominal pain, with increased tension, and the pulse became bad and rapid. On the fifth day, with a view to the relief of a possible ileus, celiotomy was undertaken, and the abdominal cavity was found to contain a few ounces of free blood. The intestinal serosa was reddened and inflamed; the intestines were distended and adherent. No source of obstruction was found, and the symptoms were ascribed to a condition of paralytic ileus. The abdomen was closed, a loop of intestine being attached to the upper angle of the wound for the purpose of a preternatural anus. The condition of the patient failed to improve, and death speedily followed the operation.

Upon post-mortem examination a cavity was found at the point where the peritoneum is reflected upon the anterior wall of the uterus, containing clotted blood and fragments of disintregrated tissue, and communicating above with the body of the uterus and below with the anterior vaginal vault. Further examination showed that this cavity resulted from a laceration three inches long in the anterior wall of the cervix uteri. The left kidney was found in the concavity of the sacrum, its upper pole lying immediately in front of the promontory and the hilus directed toward the right. The renal artery arose just above the bifurcation of the aorta, and the renal vein emptied into the vena cava in a corresponding situation.

Obstruction of the Duodenum by a Gallstone.—SCHULE (*Berliner klinische Wochenschrift*, 1894, No. 45, p. 1015) has reported the case of a woman, thirty-five years old, who for three years had suffered with moderate pain in the right hypochondrium, recurring irregularly, and not associated with jaundice. Four years before coming under observation the patient had vomited a half-pint of blood without preceding or subsequent gastric disturbances. The stomach was distended and somewhat displaced downward. With regulation of the diet and daily irrigation of the stomach the general condition somewhat improved, but vomiting recurred, and the patient was suddenly seized with collapse. On examination, only distention of the stomach was found, but the vomiting persisted despite repeated lavage. The ejected matters contained bile but were not fecal. Symptoms of coma appeared, although the urine contained neither albumin, nor sugar, nor acetone. The quantity of urine was, however, diminished. Intestinal peristalsis was not appreciable, and the conjunctivæ had become slightly icterode. The administration of nutritive enemata and the practice of enteroclysis were followed by the excretion of an increased quantity of urine. The treatment was thus continued until finally a spherical gallstone, 2.7 cm. long, and 9 cm. in circumference and weighing 4.5 grams was extruded from the bowel. Thereafter consciousness returned, and all of the threatening symptoms disappeared.

Two Cases of Cerebral Syphiloma.—At a recent meeting of the New York Neurological Society, DR. NAMMACK presented two cases of syphiloma of the brain. The first occurred in a cloth-examiner, aged thirty-four, who six weeks after contracting a chancre suddenly became unconscious, and had no recollection of what transpired during the succeeding forty days. Following this there was right-sided hemiplegia, which confined the man to bed for three months. As soon as the initial lesion was discovered the patient was put on specific treatment, and this was vigorously continued for a long time. About six weeks after the treatment was discontinued the patient developed severe occipital headache and bi-temporal hemianopsia, with ataxia and exaggeration of the knee-jerks. Under specific treatment these symptoms almost entirely disappeared. It is believed that the lesion was probably a gumma situated in the substance of the optic chiasm.

The second patient was a man, forty-four years old, who complained of dizziness, bilateral occipital headache, tinnitus, absolute deafness of the left ear, and diplopia. He also had the characteristic cerebellar gait. The history of syphilis in this case was rather obscure, but under specific treatment the man's symptoms almost entirely disappeared. The diagnosis was gumma in the cerebellar region.

New Operation for the Removal of Myofibromata of the Uterus.—At a recent meeting of the Chicago Gynecological Society SENN described a new method of removing myofibromata of the uterus by celio-hysterectomy. After ligating the broad ligaments in the usual way a circular incision is made around the uterus, dividing the peritoneum and subperitoneal fascia; then the lower segment of the uterus is deperitonized to a sufficient extent to make a cuff, which is sutured to the lower angle of the wound, uniting peritoneum to peritoneum, after which the uterine arteries are tied separately; no use is made of elastic

constriction. After the uterus has been brought forward into the lower angle of the incision the upper part of the wound is closed by suturing, which renders the part of the uterus to be removed extraperitoneal before the amputation is effected. If the cervix is left after the amputation of the uterus, the cervical canal is closed by one row of buried catgut sutures. Hemorrhage after ligation of the uterine arteries is very moderate, and is consequently very readily controlled by a number of rows of buried sutures, for which chromicised catgut is invariably used. This leaves a funnel-shaped depression in which rests the cervical stump of the uterus. About twenty-four hours after the operation the gauze is removed and the secondary sutures tied, after which, as a rule, primary union of the wound takes place.

The Influence of Sunlight on Cultures of the Tetanus-bacillus.—As the result of an experimental investigation, WESBROOK (*Journal of Pathology and Bacteriology*, vol. iii, p. 70) was able to confirm previous observations that oxygen is a necessary factor in the destruction of bacteria by light; besides, an actual diminution of the contained air was shown to take place during the time of exposure of cultures in air. The larger the surface exposed the more rapid the destruction when equal volumes are exposed. Existing data do not suffice to explain in what this process consists. Cultures of tetanus-bacilli are completely destroyed on prolonged exposure to the sun in air, though it is possible to stop at a point at which the pathogenesis vanishes while life still remains in the spores. It appeared as if those spores that survived the sun's action are capable of producing, on reinoculation into fresh tubes, quite as virulent cultures as before, but the pathogenesis seems to be increased. It was possible to inject into mice living tetanus-spores without inducing any symptoms. Further research must show whether this result is due to the smallness of the dose, to a temporary attenuation, or to the harmlessness of the spores in the absence of the poison.

THERAPEUTIC NOTES.

A Case of Splenic Leukemia Treated with Bone-marrow.—LAWRIE (*British Medical Journal*, No. 1770, p. 1238) has reported the case of a peevish, miserable child, seventeen months old, that came under observation in an advanced state of emaciation, and with a greatly-distended abdomen. The appetite was entirely lost, and sickness and diarrhea were constant and severe. The skin was harsh and dry, and, with the mucous membranes, extremely pallid. Respiration was rapid and shallow, and the pulse about 120. There was a daily rise of temperature, followed by exhausting perspiration. The urine was free from albumin and sugar. The spleen was immensely enlarged, occupying two-thirds of the abdominal cavity. The anterior edge was easily defined, and extended from the ensiform cartilage to the middle of Poupart's ligament on the left side, and passing well to the right of the umbilicus. The surface was smooth and free from tenderness. The peritoneal cavity contained a slight amount of fluid. Inquiry failed to elicit a history of syphilis or of malaria. A teaspoonful of bone-marrow twice daily was prescribed, in conjunction with appropriate nourishment. Although the case seemed somewhat hopeless, improvement rapidly set in, appetite soon returned, diarrhea ceased, and fever disappeared. The skin and mucous membranes assumed a healthy color, and the child gained in weight. The most striking alteration was the steady diminution in the size of the spleen, which could only be felt in its normal position, under the ribs. After four months of treatment the patient was restored to health and strength.

For Bronchitis.—

℞.—Phenol salicylate . . . . ʒj.
Terpin hydrate . . . . ʒj.
Codein sulphate . . . . gr. ij.—M.
Make twenty capsules or pills.
Dose.—One every four hours.

℞.—Ammonium salicylate . . . ℈ij.
Ammonium carbonate . . . gr. xxiv.
Ammonium chlorid . . . ℈iv.
Fluid extract of erythroxylon . fʒiv.
Glycerin (or syrup of bitter orange, or syrup of wild cherry) . . fʒiss.
Water sufficient to make . . fʒiv.—M.
Dose.—A tablespoonful every three or four hours.

S. SOLIS-COHEN, *Phila. Polyclinic*, vol. iii, No. 43.

The Employment of Pilocarpin in the Treatment of Pharyngeal Diphtheria and Croup.—As a result of clinical observations in a series of cases, DEGLE (*Wiener medizinische Presse*, 1894, Nos. 50, 51) arrives at the conclusion that, in the treatment of pharyngeal diphtheria and croup, pilocarpin is a more useful remedy than any hitherto reported. Its action, however, is not believed to be specific, but is attributed to the increased secretory activity of the mucous membranes induced. The remedy is not so dangerous in children as experience has shown it to be in the case of adults. The extremely grave cases will not yield to pilocarpin, as they will also not yield to other remedies. In urgent cases, subcutaneous injections may be employed. Under any conditions, early and energetic application of the drug is to be commended.

The Treatment of Whooping-cough.—CHATEAUBOURG (*La Médecine Moderne*, 1894, No. 103, p. 1614) reports a group of five cases of whooping-cough in which injections of guaiacol and eucalyptol were employed with excellent results. The injections consisted of two-and-one-half c.c. of a 10 per cent. solution of guaiacol and eucalyptol in sterilized oil, and were repeated daily. In all instances the symptoms rapidly subsided after the third injection, diminution in the cough being particularly noted; vomiting soon ceased, the appetite was restored, the general condition improved, and the strength conserved.

Treatment of Peripheral Neuritis with Hypodermic Injections of Strychnin.—STODART-WALKER (*British Medical Journal*, No. 1773, p. 1425) has reported three cases of peripheral neuritis in which the subcutaneous injection of strychnin in doses of from gr. $\frac{1}{80}$ to gr. $\frac{1}{40}$, three times a day, was speedily followed by permanent improvement.

The Treatment of Delirium Tremens.—HASKOVEC (*Comp. Rend. Hebd. des Séances de la Soc. de Biol.*, ser. x, t. i, No 33, p. 810) recommends the administration of chloralose in doses of from 4½ to 9 grains, once or oftener, in the treatment of delirium tremens, and reports five illustrative cases.

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SATURDAY, JANUARY 26, 1895.

THE FIRST SYMPHYSIOTIMIES IN AMERICA.

IN the month of February, 1894, we received from DR. J. O. WILLIAMS, of William Penn, Texas, an account of three symphysiotomies performed by him: the first on April 29, 1880, at Denison, Texas, the second on July 15, 1884, in Washington County, Texas, the third in May, 1889, in Washington County, Texas. We concluded, of course, that so astonishing a report needed further investigation and proof, and at once set about its verification. Almost a year has been consumed in a voluminous correspondence between the Editor of THE NEWS, in conjunction with the great statistician, DR. R. P. HARRIS, whom we naturally consulted in reference to the matter, and DR. WILLIAMS, as also with many physicians and residents of Texas.

The result of the whole investigation is a mass of cumulative evidence, the details of which we think it unnecessary to publish, that has entirely convinced both DR. HARRIS and ourselves of the truth of the claim made by DR. WILLIAMS.

Instead of publishing the report of the cases just as DR. WILLIAMS had sent it to us, we prefer,[1] for a number of reasons, to epitomize the details and add our own word of editorial comment.

CASE I.—During 1879 DR. WILLIAMS, then of Denison, Texas, was consulted by a girl thirteen years of age, and also by her mother, in reference to the child's pregnancy. They demanded that an abortion should be produced. This was refused, and by a solemn promise of absolute secrecy DR. WILLIAMS succeeded in getting *their* promise to allow the pregnancy to come to term, upon the condition that he would then secretly deliver the child, etc. This was done on April 29, 1880. The girl had been in "violent labor" for eighteen hours, and delivery was only possible by means of the idea, spontaneously occurring to DR. WILLIAMS at the time, of separating the pubic bones by means of a tenotomy-knife. "With one hand the clitoris was depressed to the right side and the blade made to enter as centrally as I could direct, until the point came in contact with the bone. It was then forced upward along the front until the superior margin was reached. I grasped the knife between my fingers and thumb, and, as forcibly as I would risk, drew the blade along the symphysis. The bones yielded and very gently separated before the blade had traversed the entire extent. The bones parted, so that I could depress the overlying tissues and the ends of my fingers between them. I now had no trouble in applying the forceps and delivering the child, which weighed twelve pounds. The mother and child did well." DR. WILLIAMS then went to a dressmaking establishment and gave directions for a laced abdominal and pelvic band, or bandage, which was "applied and was worn for the remainder of the time that I had the patient under charge, probably a month or six weeks."

In connection with this case it will readily be seen that the details of names, the exact place of the operation, the street-number, etc., cannot be published if the promise of Dr. WILLIAMS is to be kept. The interested persons still live, and any such disclosure would at once result in tragedy. But we have in our possession every particular necessary to establish the absolute accuracy of the foregoing report of facts, and can unqualifiedly vouch for their truth as given.

[1] One reason for this decision may be gleaned from these words of Dr. Williams in a letter: "Writing or reporting anything of my own work is just as contrary to my inclination and desire as anything I can possibly undertake. If you see proper to allow space in your valuable journal for what I have written, you will have to take the trouble upon yourself of *dressing it up* in fashionable language in keeping with the high tone of your periodical, etc."

The particular reasons for secrecy do not exist in the second and third cases, and these help to furnish indirect proof of the truth of the report of the first case.

CASE II.—DR. WILLIAMS' second operation was performed on July 15, 1884, upon Mrs. S. W. Wicks, of Washington County, Texas. The woman was twenty-three years of age, and this was her first pregnancy. She had been in labor "many hours." "I found a badly contracted and disturbed pelvis. I tried to separate the bones, as in Case I, with the tenotomy-knife, but failed. I then used a probe-pointed curved knife, placing the extremity of the cutting surface of the blade on the superior margin of the symphysis, forcing the blade through the overlying tissues, and as the blade came down upon the bone the handle of the knife was elevated so that the point or extremity was maintained in close proximity to the posterior surface of the symphysis, and, guiding it by the finger of the other hand in the vagina, the blade was carried down until the large part of the blade was in contact with the bone. I now exerted all the pressure permissible, and after much worry and some discouragement I discovered the bones yielding. I withdrew the knife, and, as the contraction renewed, I made pressure over the fundus. The bones now parted, and I applied the forceps, but failed to deliver. I now perforated the head, again applied the forceps, and effected delivery. I drew the one-and-one-half inch flesh wound together with adhesive strips, and placed on a nice-fitting bandage. The woman was up and said she felt well on the twelfth day."

As a bit of confirmatory testimony the following affidavit, copied from the original in our hands, may be appended:

Newton County, Ga.:

I, S. W. Wicks, do hereby certify that I lived in Washington County, State of Texas, in the year 1884; that on the 15th day of July, in said year 1884, I was confined, and that Dr. J. O. Williams, of Penn, Texas, attended me during said confinement. There was some trouble in getting the child from me that I cannot exactly explain; but afterward the Doctor (Williams) told me he had tried to save the child, but could not do so. He said that he had *separated* the bones in my hips in order to get the child from me, and that I would be compelled to remain sometime in bed, keep quiet, and be carefully looked after, or I would suffer afterward, and may be never get well. I was kept *bandaged* and my limbs together. I felt so well that on the twelfth day I was up all day. I had been up several times for a short while before this, but was up all day on the twelfth day—went visiting in three weeks. I have felt no bad effects since then from my difficulty. On October 1, 1886, I gave birth to a son, who is now alive.

S. W. WICKS.

Sworn to and subscribed before me, this June 18, 1894.
[SEAL.] JOHN B. DAVIS,
Clerk Supreme Court, Newton Co, Ga.

CASE III.—This operation was performed in May, 1889. The patient was a negress, about eighteen years of age. She had been in convulsions for thirty hours, with pains similar to those of labor for two or three days before. "I found the pelvis so contracted transversely that it was with some difficulty that two fingers could be passed. I at once decided upon pubo-symphysiotomy, which was readily accomplished as in Case II. The forceps was applied, the child delivered, and with much difficulty resuscitated. The report was that the woman 'had not passed urine since the fits had set in,' and probably not for a day or two before that time. The woman died, but the child lived."

The following affidavit, with other testimony, is confirmatory of the foregoing report:

THE STATE OF TEXAS,
County of Washington:

Before me, the undersigned authority, on this day, personally appeared B. F. Dotson, who, being by me duly sworn, deposes and says, that he was present and assisted Dr. J. O. Williams in attending a negro girl who had been having labor-pains about four days under the attention of a woman, but could not give birth to the child. She had been having convulsions for several hours before I knew of her being seriously ill; they were renters on my place. I told the husband of this woman to go for a doctor or he would have a dead wife. The woman was unconscious and having frequent convulsions.

I sent for Dr. J. O. Williams myself. He came, and tried to take the child, but failed in doing so.

He spoke to the relatives about opening the belly and removing the child that way, but they were not willing to that. I told the Doctor to go on and do as he thought best, and that I would assist in any way I could. I held the legs in suitable position and the Doctor passed a knife-blade in center of the hip-bones, and they separated so that in a few moments he could take the child, which after some time began to breathe, and got along all right and lived about one year.

The woman had been in convulsions all this time, and remained so to her death, about three days afterward.

Her hips were bandaged tightly, but she would sometimes jump out of bed, and I think one time ran out of the house.

I heard the Doctor say that he performed the same operation in relieving a lady, Mrs. W., who some years ago lived on my place and was in the same house as this girl now was.

The operation upon the girl in which I assisted was

in May, 1889. The one upon Mrs. W. was, I think, about four years before this. B. F. DOTSON.

Sworn to and subscribed before me, this March 14, 1894. [SEAL.] E. P. CURRY,
County Judge of Washington County.

This is to certify that I know Mr. B. F. Dotson personally, and that he is an extensive farmer and prominent man of this county, and perfectly reliable in every respect. E. P. CURRY,
County Judge of Washington County.

We could easily fill a whole issue of THE MEDICAL NEWS with details and incidents in connection with these cases, especially of the first, and with excerpts from the letters of DR. WILLIAMS, and every line we are certain would be voted of absorbing interest by our readers. We almost regret the lack of space to do so, and at least wish that a historic essay might be written concerning the matter. We can imagine no novel of more intense interest, no sociologic study more bountiful in instruction. Here was a man who spontaneously conceived and thrice carried out the operation of symphysiotomy before any American surgeon. He was frankly deficient in preliminary education and placed in a frightful tangle of most distressing and possibly tragic circumstances, no hint of which we have been able to give. He was surrounded by a set of conditions the dramatic interest of which we have scarcely seen equalled upon the stage. Through it all he has carried himself, and out of it all he has brought himself, with a combination of shrewdness, and modesty, and probity beyond all praise. We cannot forbear a short characteristic quotation from one of his private letters:

I care not how successful a doctor is, or how many affixes he can lawfully link with his name. Or of what religious denomination he is a *faithful* follower of—aggressive or conservative in his professional life it makes no difference, he will have a neighbor that would not permit him to *doctor* his *unfaith*ful hound. My idea is that every individual has individual rights and privileges, that will not interfere with those of others, and then a *general* governing principle that surmounts, pervades and limits this physical life of ours, so that the life of one that tends to perfect *the Ego*, and at same time lends honor to the general body or unity; that has an *honest*, firm purpose, and the determination to "hew as near the conceived line of truth as possible, the chips falling where they may," constitutes the life of a true man. Educated or illiterate the measure holds good and the article is so many Carats fine in proportion as *opportunities* have been *rightfully* utilized—just *how we've improved ourselves* and *governed* is the *weights* upon the beam of life's scale.

The chief lesson that springs to view is one that has been summed up in the expression of DR. HARRIS: *In your reports and statistics, wait until you hear from the backwoods.* "The backwoods" are often deficient in literary qualities, and in many of the arts of modern medicine, "push" and self-assertion included, but they are often profoundly ingenious, and not seldom exhibit an unchronicled heroism quite equal to any that vaunts itself in populous places.[1]

THE NEED OF A DEPARTMENT OF HYGIENE AT WEST POINT.

THE report of the Committee on Hygiene and Athletics, composed of Messrs. W. W. KEEN, JOHN C. BLACK, and JOHN J. DAVIS, of the Board of Visitors of the United States Military Academy at West Point, contained in the report to the Speaker of the House of Representatives (for the year 1894), contains some points of exceptional interest. That the sanitary conditions prevailing at West Point are good is seen by the fact that during the year no case of infectious disease occurred among some 1300 students. For the large amount of eye-strain that is evident, one-fifth of the cadets requiring glasses, the committee makes some excellent suggestions as to ocular hygiene. But we fear the committee leans too much toward the old-time view that eye-strain arises from poor light, from level instead of sloping desks, etc., whereas the truth must be acknowledged that if ametropia exists (and exist it does in much greater degree and more frequently than is supposed), all the hygiene, so-called, in the world will not replace the need of correcting glasses.

The committee has made the astonishing discovery that the entire instruction in hygiene at West Point is "limited to six advance lessons (and five review)," and one lecture on first aid to the injured. That this is ludicrously insufficient will be evident to anyone giving the subject a moment's consideration. We cannot, however, forbear quoting the wise words of the committee:

The sanitation of armies during war is not merely a medical question. However desirable the medical requirements may be, military necessities may make it

[1] Dr. Joel O. Williams is well known to me through a long and voluminous correspondence not yet ended. I regard him as a man of strong individuality, a lover of truth, and reliable in his statements, from principle and moral training. B. F. Dotson, who aided him in his third operation, was at one time a student of medicine. Mrs. Wicks is a widow, and reported to me as a good, reliable woman by those who knew her in Newton, Georgia. The child of Case I is thought to be living.—ROBERT P. HARRIS.

needful to disregard them, even at serious risk to the health of the army. But in probably the majority of cases this is not true, and when not so the importance of the proper location and sanitation of camps and barracks and of those medical precautions which may be highly conducive to the health and therefore to the success of an army should be fully understood by the officers of the staff and line, so that they may appreciate their stringent necessity and act in accordance with them, instead of inviting disaster by their violation. This violation will be none the less injurious or even fatal to the military success of an army because it is committed unintentionally and purely from ignorance of the laws of health, for these laws require obedience and enforce their own penalties as rigidly as the laws governing military operations themselves.

In addition to this it needs no argument to convince any intelligent man of the importance of every soldier and officer knowing how to render effective first aid to the injured and wounded, especially in an occupation one of whose chief objects and dangers is the infliction and reception of such wounds and injuries. In fact, in the past, especially in small commands on duty without a medical officer, most valuable lives actually have been lost to the army and the country for the want of exactly such knowledge. Instruction in first aid is given with reasonable fulness to the soldiers at this command, as each of them serves in turn as a company bearer. Prospective officers should certainly be as well instructed as their men, and if possible better.

The suggestion that there should be a chair of anatomy, physiology, hygiene, and first aid to the injured, commends itself as a most belated and much-needed step in progress. Surely some of the 565 hours devoted to chemistry, mineralogy, and geology might profitably be given to health.

As to athletics, the committee rightfully praises and commends its cultivation. But as to foot-ball there is a noteworthy qualification. The comparative statistics offered are the only ones in existence that can lay claim to scientific accuracy.

From them we quote as follows:

TOTAL INJURED.

Foot-ball	54
Riding	17
Gymnasium	9
Total	80

Injuries in riding and gymnasium usually very slight.

Days lost from—

Foot-ball accidents	277
Injuries in riding	57
Injuries in gymnasium	11

Per cent. of accidents per man in—

	1892.	1893
Foot-ball	01.05	01.6
Riding	0.11	0.09
Gymnasium	0.10	0.08

Per cent. of days lost per man in—

	1892.	1893.
Foot-ball	3.93	8.01
Riding	0.35	0.31
Gymnasium	0.10	0.15

Per cent. of men off duty per diem in—

Foot-ball	1.18	3.01
Riding	0.79	0.63
Gymnasium	0.64	0.12

Per cent. of days lost per accident in—

Foot-ball	2.98	5.01
Riding	2.74	3.04
Gymnasium	5.80	1.02

To obtain the comparative percentage of foot-ball and riding accidents multiply the percentages of foot-ball accidents by 3, as foot-ball is only played once a week, and riding is done three times a week.

To obtain the comparative percentages of foot-ball and gymnasium accidents multiply the foot-ball percentage by 6, as the exercise in the gymnasium is taken six times a week.

The committee concurs in the Superintendent's advice that the interacademic games be abandoned.

EDITORIAL COMMENTS.

Successful Celiotomy for Perforating Typhoid Ulcer with Peritonitis.—The most alarming, as well as the most fatal, complications of typhoid fever are intestinal hemorrhage and intestinal perforation. Recovery may ensue after either, although it cannot be said that much can be done medicinally to favor such a result. In the nature of things the danger is less great from hemorrhage than from perforation, although, as intimated, cases have been reported in which it was believed that recovery followed intestinal perforation. In view of all of the circumstances and particularly of the fatality of the complication if left to itself, the only logical mode of treatment seems to reside in operative interference. The number of instances in which the surgeon has intervened is as yet not a large one, and although the results have not been invariably as favorable as they might be, enough has been demonstrated to show that the operation is a life-saving one, and the proportion of successes must increase as the occurrence of the complication is recognized early and the cases come immediately under the notice of the surgeon. To the successful cases already on record is to be added another in the hands of an American surgeon.

ABBE (*Medical Record*, No. 1261, p. 1) has reported the case of a young married woman, twenty-one years old, who, in the third week of an attack of typhoid fever, when convalescence appeared to be setting in, was seized with great pain associated with a feeling as if something had suddenly given away in her abdomen below the umbilicus. The woman vomited, became much collapsed, and the temperature rose rapidly to 102°; great pain and tympanites were present. Perforation was suspected and the patient was kept absolutely quiet, poultices being applied to the stomach, and sufficient morphin being given to allay the great pain. The temperature fell somewhat, but for two days ranged

between 102° and 102.5°. The vomiting subsided, but the tympanites continued. At the end of the second day the woman's condition became suddenly worse, the pulse grew weaker and the abdomen greatly distended.

It was now determined to operate, and a median incision below the umbilicus exposed distended coils of deeply-congested and greatly-inflamed intestine smeared with sticky lymph. The pelvis and lower abdomen were filled with a collection of foul, purulent, and fetid intestinal extravasation. This was feebly confined by matted coils of intestine loosely glued together and which broke apart on being touched, but, being recognized, permitted the introduction of clean celiotomy-sponges. Under the upper abdominal wall a few coils were seen that showed more recent inflammation. Two pints of foul, purulent fluid and thick lymph were cleaned out and the abdomen irrigated with warm and weak sublimate solution, 1 : 20,000, followed by plain warm water. In the lower part of the ileum were found many thick, oval patches, having their long axes parallel to that of the bowel, easily identified by touch as the intestine passed through the fingers, and shown also by increased subperitoneal hyperemia. One such inflamed Peyer's patch presented a gangrenous perforation a quarter of an inch in diameter, from which intestinal contents were seen to make their exit. The opening was closed by interrupted silk sutures, over which two layers of mattress stitches were placed, as these were the only sutures that would hold in the tender and inflamed intestinal coat. A large abdominal tamponade of iodoform-gauze was placed within the abdomen and pelvis, and no attempt was made to close the wound. An enema of hot black coffee and whiskey assisted greatly in preventing shock. The patient was put back to bed in three-quarters of an hour from the beginning of anesthesia. She passed a good night and had a strong pulse on the following morning. The tympanites was also less.

At the end of forty-eight hours the patient was in good condition, when the tamponade was replaced by a new and loose one and five grains of calomel were administered. A little fluid feces leaked from the wound after the action of the calomel, and continued so to do for two weeks. The abdominal wound pursued the usual course, closing in rapidly by granulation and leaving a narrow and firm scar. After the third day the appetite improved and rapid convalescence ensued.

The Murderer and the Ocular Photograph.—The student of psychology, both morbid and sociologic, finds nowhere better material than in medical superstitions. The immortality of these superstitions is wonderful. They are not affected by civilization, and the growth of science and of common sense leaves them untouched. Of late the newspapers of the land have been immensely interested in the astonishing exhibitions in the eye of a murdered woman of the photographic image of her murderer. The "local scientist" examines the dead woman's eye, and by "a magnification of 400 diameters" he finds plainly the image of a "man's form." Coroner, clergyman, and others saw the startling photograph. There is something not a little pathetic in the impulsive desire on the part of poor humanity to find that divine retribution has contrived some secret means whereby crime shall be found out. But when we read the account carefully we find that in the present case the "local scientist" examined the dead woman's eye as it rested naturally in the socket. That, of course, means that he examined the cornea, because without the aid of the ophthalmoscopic principle the retina of the undissected eye is still as invisible as it was before Helmholtz invented the ophthalmoscope. But, unless the woman wore biconvex lenses of some thirty or more diopters, how, in the name of optics, would an image be formed upon the cornea? This leaves out of the count the facts that nobody ever wore such lenses, and that if one did no image could be formed of the murderer a few feet away, and that the cornea is a light-transmitting structure, without any analogy to that of the retina or a photographic sensitive plate. We suppose that this kind of popular science had in mind a vague echo of the experiments with the visual purple of the retina, which seemed to give some warrant for the belief in retinal fixation of the last image seen before death. But the unconscious transferring of the seat of the changes to the cornea was as remarkable for blundering and for jumping to conclusions as such science could well be. It is this condition of mind that makes visible what does not exist and that renders human testimony as regards certain things utterly valueless.

The Lancet Relief Fund.—The Sixth Annual Report of the Almoners of the Lancet Relief Fund shows a continuance of the good work for the prosecution of which the Fund was instituted. Every January the proprietors of the great metropolitan medical weekly whose name the Fund bears provide $1500 for the Fund, which is administered free of cost by a committee of almoners consisting of the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the President of the General Medical Council, Mr. Thomas Wakley and Mr. Thomas Wakley, Jr. The Fund has for its object the rendering of immediate pecuniary assistance to registered medical practitioners or to the widows or orphans of members of the profession in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. During the year 1894 the sum of $1720 was granted in relief, while repayments of loans to the amount of $105 were made. There were fifty-six applicants for relief; assistance was afforded in twenty-six of these, the amounts granted ranging from $25 to $150.

Foot-ball Impetigo.—To the opprobrium under which the game of foot-ball already rests is yet to be added the responsibility of causing a peculiar form of cutaneous disorder. For the purpose of obtaining information as to the etiology, nature, and treatment of the affection, which was recently prevalent among English foot-ball players, the Council of the Medical Officers of Schools Association of London has issued an appeal asking for data as to (1) the nature of the site upon which the school stands, whether the pupils are affected or not; (2) whether Association or Rugby foot-ball is played; (3) the nature of the disease, particularly as to its contagiousness; (4) the prophylactic and curative treatment proper to the disease. The disorder is believed to be contagious, and occurs principally on the face, ears, and

neck, and sometimes on the hairy scalp. It successively passes through stages of erythema, papule, vesicle, and purulent crust.

Attendance of the Medical Colleges of the United States and Canada.—From statistics gathered by the *Journal of the American Medical Association* it is estimated that the aggregate attendance of the medical colleges of the United States and Canada for the session of 1894–95 will reach 20,800, as compared with 18,500 for 1893–94, and 18,340 for 1892–93. The great gain of the session of 1894–95 is found to be at the expense of higher medical education (which is made to stand for a lengthened term of study); for while in 1893–94 there were 803 four-year students, there were but 781 in 1894–95. The following comparative figures are given as the relative number of students to the population in various countries: In the United Kingdom 1:5286, in France 1:7776, in Germany 1:5757, in the United States and Canada 1:3365.

The Annual Report of the New York State Board of Health contains some interesting data. The death-rate for 1893 was 19.50; for 1892, 20.78; for 1891, 21.43; and for 1889 and 1890, 19.65. The highest mortality occurred in the months of March and July, the lowest in June and November. The mortality among children under five years of age was 33.6 per cent. of the deaths at all ages. Zymotic diseases caused 180 deaths in every 1000 deaths from all causes. During the year 1893, 20,310 cattle were examined for tuberculosis, at an average cost of 47 cents per head; 687 were found to be tuberculous, and were therefore killed. The diagnosis was based upon reaction to injections of tuberculin. Eight samples of butter were examined bacteriologically, some having been prepared from the milk of tuberculous cows, but no tubercle-bacilli were found.

NEWS ITEMS.

The Cleveland Medical Society at its annual meeting, held recently, elected the following officers: *President*, William E. Wirt; *First Vice-President*, Augustus F. House; *Second Vice-President*, Henry S. Upson; *Recording Secretary*, W. F. Brokaw; *Corresponding Secretary*, Frank S. Clark; *Treasurer*, N. Stone Scott; *Librarian*, William E. Bruner; *Censors*, M. Rossenwasser, Howard S. Straight, L. B. Tuckerman, A. J. Cook, W. J. Scott; *Pathologist*, A. P. Ohlmacher; *Trustees*, H. G. Sherman, Charles Gentsch, C. F. Dutton. The society has 291 members. The average attendance for the year was 135. The society meets every two weeks.

Correction.—By an inadvertence it was announced in THE NEWS of January 19th that the next meeting of the Pennsylvania State Board of Medical Examiners will be held on February 14th, whereas the date should have been February 12th. We would also correct the statement in the same number as to the examination of bacteriologists for the positions of bacteriologist and assistant bacteriologist of the Philadelphia Bacteriologic Laboratory. The examinations are open to all, whether residents of Philadelphia or not, and the appointees being under civil service regulations are not subject to removal by "political" changes or influences.

A National Congress of Tuberculosis is to be held in the buildings of the University of Coimbra, Portugal, on March 24th, which is the date on which Koch announced his discovery of the tubercle-bacillus.

Prof. J. Burdon Sanderson has been appointed Regius Professor of Medicine in the University of Oxford, in succession to Sir Henry Acland.

A Statue of Helmholtz is contemplated in Berlin. The German Emperor has expressed a willingness to contribute $2500 to a fund for the purpose.

Medical College Amalgamation.—It is announced that the Chicago College of Physicians will consolidate with the University of Illinois.

Sir Joseph Fayrer has retired from the office of President of the Medical Board at the India Office in London.

Lady Paget, wife of Sir James Paget, died January 7th, at the age of eighty years.

BOOKS AND PAMPHLETS RECEIVED.

Text-book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber. New York and London: MacMillan & Co., 1894.

Transactions of the American Surgical Association. Vol. XII. Edited by De Forest Willard, M.D. Philadelphia: Printed for the Association and for sale by William J. Dornan, 1894.

A Manual of Hygiene. By Mary Taylor Bissell, M.D. New York: The Baker & Taylor Co., 1894.

Primary Melanotic Sarcoma of the Eyelid, with Report of a Case. By M. W. Zimmerman, M.D. Reprinted from the Ophthalmic Review, vol. xiii, 1894.

Notes on Some Cases of Congenital Malformations of the Face and Ears. By C. A. Hamann, M.D. Reprinted from the University Medical Magazine, 1894.

A Study of Scarlet Fever at High Altitudes. By J. N. Hall, M.D., and William P. Munn, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Shipowners and Ships' Surgeons. Including Truth's Article (August 24, 1893) "Doctors at Sea." By Charles Henry Leet. Pamphlet. Liverpool: Seaforth, 1893.

Distraction in the Treatment of Hip Disease. By Edward H. Bradford, M.D., and Robert W. Lovet, M.D. Reprinted from the New York Medical Journal, 1894.

Text-book of Nervous Diseases, being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D. Third Edition. New York: William Wood & Co., 1894.

Report of the Special Committee on Public Poor Relief in Waterbury, Conn., 1894. Waterbury, Conn.: The Jackson Quick Printing Co., 1894.

Notes on Disease of the Ear and Upper Air-Passages in Apex Catarrh. By Howard S. Straight, A.M., M.D. Reprinted from the Medical Record, 1894.

Symphysiotomy *versus* the Induction of Premature Labor. By Charles P. Noble, M.D. Reprinted from the Transactions of the American Gynecological Society, 1894.

Practical Manual of Diseases of Women and Uterine Therapeutics. For Students and Practitioners. By H. McNaughton-Jones, M.D., M.Ch., M.A.O. Sixth edition. London: Ballière, Tindall & Cox, 1894.